As confidentially submitted to the Securities and Exchange Commission on July 22, 2020. This draft registration statement has not been publicly filed with the Securities and Exchange Commission and all information herein remains confidential.

Registration No.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1 REGISTRATION STATEMENT
Under
The Securities Act of 1933

PRAXIS PRECISION MEDICINES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**2834**	**47-5195942**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification Number)**

One Broadway, 16th Floor
Cambridge, MA 02142
617-300-8460
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Marcio Souza
Chief Executive Officer
One Broadway, 16th Floor
Cambridge, MA 02142
617-300-8460
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Richard A. Hoffman, Esq. **Edwin O'Connor, Esq.** **William D. Collins, Esq.** **Goodwin Procter LLP** **100 Northern Avenue** **Boston, MA 02210** **(617) 570-1000**	**Jonathan L. Kravetz, Esq.** **John T. Rudy, Esq.** **Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C.** **One Financial Center** **Boston, MA 02111** **(617) 542-6000**

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, check the following box. ☐

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	☐	Accelerated Filer	☐
Non-Accelerated Filer	☒	Smaller Reporting Company	☐
		Emerging Growth Company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of each Class of Securities to be Registered	**Proposed Maximum Aggregate Offering Price(1)**	**Amount of Registration Fee(2)**
Common Stock, par value $0.0001 per share	$	$

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.
(2) Calculated pursuant to Rule 457(o) under the Securities Act of 1933, as amended, based on an estimate of the proposed maximum aggregate offering price. Includes the offering price of shares that the underwriters may purchase pursuant to an option to purchase additional shares.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

Pursuant to the applicable provisions of the Fixing America's Surface Transportation Act, we are not required to file our financial information for the three months ended March 31, 2020 because we plan to file our financial information for the six months ended June 30, 2020 in the first public filing of our registration statement. While the financial information for the three months ended March 31, 2020 is otherwise required by Regulation S-X, we believe that it will not be required to be separately presented in our registration statement at the time of the first public filing. We intend to amend the registration statement to include all financial information required by Regulation S-X at the date of such amendment before distributing a preliminary prospectus to investors.

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The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PROSPECTUS (Subject to Completion) **Dated , 2020**

Shares

Common Stock

This is the initial public offering of shares of our common stock. We are offering shares of our common stock. Prior to this offering, there has been no public market for our common stock. We have applied to list our common stock on The Nasdaq Global Market under the symbol "PRAX." We expect that the initial public offering price of our common stock is expected to be between $ and $ per share.

We are an "emerging growth company" under applicable Securities and Exchange Commission rules and will be subject to reduced public company reporting requirements for this prospectus and future filings.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

Our business and an investment in our common stock involve significant risks. These risks are described under the caption "Risk Factors" beginning on page 11 of this prospectus.

	Per Share	*Total*
Public offering price	**$**	**$**
Underwriting discounts(1)	**$**	**$**
Proceeds, before expenses, to Praxis Precision Medicines, Inc.	**$**	**$**

(1) See "Underwriting (Conflicts of Interest)" beginning on page 214 of this prospectus for additional information regarding underwriting compensation.

The underwriters may also purchase up to an additional shares from us at the public offering price, less the underwriting discount, within 30 days from the date of this prospectus to cover overallotments.

The underwriters expect to deliver the shares against payment in New York, New York on .

Book-running Managers

Cowen **Evercore ISI** **Piper Sandler**

Lead Manager

Wedbush Pacgrow

Co-Manager

Blackstone Capital Markets

, 2020.

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Through and including , 2020 (25 days after the commencement of this offering), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

You should rely only on the information contained in this prospectus or in any free writing prospectus we file with the Securities and Exchange Commission, or the SEC. Neither we nor the underwriters have authorized anyone to provide you with information other than that contained in this prospectus or any free writing prospectus prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters are offering to sell, and seeking offers to buy, common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date on the front cover page of this prospectus, or other earlier date stated in this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

For investors outside of the United States: We have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any

jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

The market data and certain other statistical information used throughout this prospectus are based on independent industry publications, governmental publications, reports by market research firms or other independent sources that we believe to be reliable sources. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. We are responsible for all of the disclosure contained in this prospectus, and we believe that these sources are reliable; however, we have not independently verified the information contained in such publications. While we are not aware of any misstatements regarding any third-party information presented in this prospectus, their estimates, in particular, as they relate to projections, involve numerous assumptions, are subject to risks and uncertainties and are subject to change based on various factors, including those discussed under the section entitled “Risk Factors” and elsewhere in this prospectus. Some data are also based on our good faith estimates.

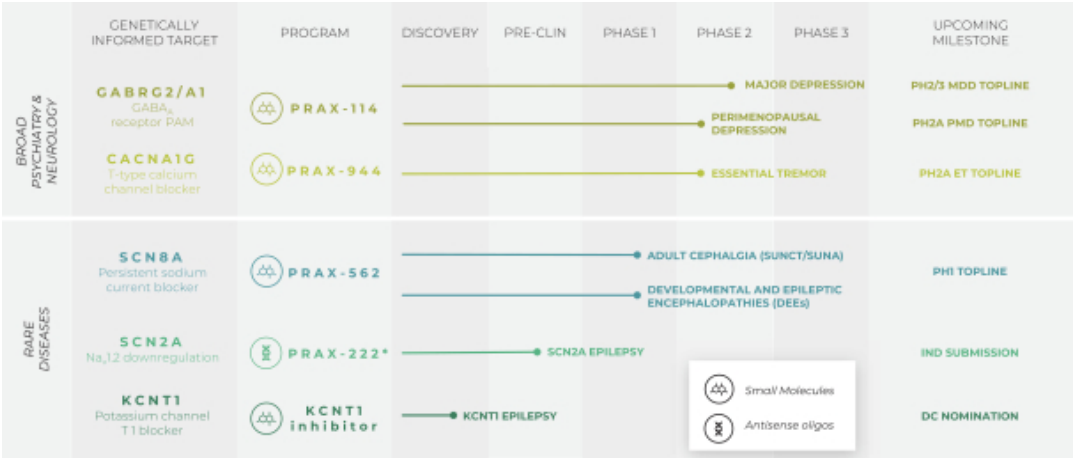
PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our consolidated financial statements and the related notes included elsewhere in this prospectus. You should also consider, among other things, the matters described in the sections entitled "Risk Factors," "Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," in each case appearing elsewhere in this prospectus. Unless the context otherwise requires, we use the terms "Praxis," "Company," "we," "us" and "our" in this prospectus to refer to Praxis Precision Medicines, Inc.

Company Overview

We are a clinical-stage biopharmaceutical company translating genetic insights into the development of therapies for central nervous system, or CNS, disorders characterized by neuronal imbalance. Normal brain function requires a delicate balance of excitation and inhibition in neuronal circuits, which, when dysregulated, can lead to abnormal function and disease. We are applying insights into the genetic mutations that drive excitation-inhibition imbalance in diseases to select biological targets for severe pediatric epilepsies and more broadly for prevalent psychiatric diseases and neurologic disorders. We apply a deliberate and pragmatic precision approach, leveraging a suite of translational tools including novel transgenic and predictive translational animal models and electrophysiology markers, to enable an efficient path to proof-of-concept in patients. We have three product candidates currently in clinical development. We intend to develop best-in-class therapies that can deliver long-term benefits to human health by meaningfully impacting patients and society.

Our insights into genetic mutations resulting in neuronal imbalance have enabled us to develop a pipeline addressing prevalent psychiatric and neurologic conditions and rare diseases, with the ability to expand into additional indications. We have established a broad portfolio, including five disclosed programs across multiple CNS disorders, including depression, epilepsy, movement disorders and pain syndromes. We expect multiple topline clinical trial readouts from our three clinical-stage product candidates before and anticipate the launch of a new clinical development program in . Below is a summary of our portfolio of programs, organized by their initial therapeutic focus. We own global commercialization rights for all of our product candidates.



* PRAX-222 is a collaboration with Ionis Pharmaceuticals, Inc., or Ionis, and RogCon Inc. Ionis is eligible to receive double-digit royalties on net product sales worldwide.

PRAX-114

We are developing PRAX-114, an extrasynaptic-preferring $GABA_A$ receptor positive allosteric modulator, or PAM, for the treatment of patients suffering from major depressive disorder, or MDD, and perimenopausal depression, or PMD. PRAX-114 is under development as a potential best-in-class treatment as both a monotherapy and adjunctive therapy for both the acute and maintenance setting. We have a multi-cohort, three-part Phase 2a clinical trial ongoing in Australia, with Part A having demonstrated rapid and marked improvements in depression scores in MDD patients. Topline data, which will include PMD patients (Part B) and longer-term dosing in MDD patients (Part C), are expected in . We intend to initiate the first of two registrational trials, Phase 2/3, in the United States and Australia in for the treatment of MDD and expect topline data in .

There is significant unmet medical need in MDD and PMD with over 22 million individuals suffering from highly debilitating depressive symptoms in the U.S. Current pharmacological interventions suffer from multiple shortcomings including slow onset of efficacy, low response rates and side effects that limit patient compliance. PRAX-114 targets an increasingly well-understood neuronal circuit in the brain that we believe, when properly modulated, can result in a robust antidepressant effect with an advantageous safety and tolerability profile.

We believe that our PRAX-114 program has several advantages as compared to currently available therapies and product candidates in the $GABA_A$ PAM therapeutic class:

- **Wider Therapeutic Window**. We have determined that PRAX-114 is an approximately 10.5-fold more potent PAM of the extrasynaptic form of $GABA_A$ receptors compared to the synaptic form. By preferentially modulating extrasynaptic $GABA_A$ receptors, we believe PRAX-114 has the potential to mediate antidepressant and anxiolytic activity without the significant sedation observed with less selective neuroactive steroids.
- **Patient-Centric Dosing.** We believe the ability to administer PRAX-114 with or without food is key for clinical and commercial success in MDD and is critical for a patient-centric therapeutic, as many patients with depression suffer from appetite disturbance. We have observed rapid absorption of PRAX-114 with a favorable pharmacokinetic, or PK, profile across multiple trials. Based on clinical findings, we believe that PRAX-114 does not need to be taken with food to achieve therapeutic exposure, whereas other $GABA_A$ PAMs may require food to achieve therapeutic exposure.
- **Chronic Administration**. After consultation with the U.S. Food and Drug Administration, or the FDA, and other stakeholders in MDD and PMD therapy, we designed our Phase 2/3 trial of PRAX-114 to include 28-day nightly dosing to evaluate patients at both 14 days to assess the rapidity and robustness of response and 28 days to evaluate durability of effect. We believe that a chronic dosing paradigm is consistent with the duration of depressive episodes and will provide the most substantial benefit to patients in controlling their disease, further differentiating PRAX-114 from other $GABA_A$ PAMs.
- **Indication Expansion.** Because PRAX-114 has demonstrated a novel pharmacology and, to date, has a well-tolerated profile, we believe PRAX-114 is suitable for potential development across a wide-range of indications in psychiatry and neurology, providing sizable expansion opportunities to explore in addition to MDD.

PRAX-944

We are developing PRAX-944, a potential first-in-class selective small molecule inhibitor of T-type calcium channels, for the treatment of Essential Tremor, or ET. We have evaluated the safety and

tolerability of PRAX-944 in over 100 healthy volunteers in four separate clinical trials and demonstrated pharmacodynamic effects in humans using electroencephalography, or EEG. We are currently conducting a Phase 2a proof-of-concept open-label trial in ET patients and plan to announce topline data in .

There is a large body of clinical, preclinical and genetic evidence that points to the involvement of T-type calcium channels in the cerebello thalamo cortical, or CTC, circuit as a main driver of ET. ET is the most common movement disorder, affecting up to seven million patients in the United States, which is seven times more individuals compared to Parkinson's tremor. ET is a progressive and debilitating movement disorder with action tremors that significantly disrupt daily living. There is a high unmet need for ET patients given the limited treatment options, with only one approved pharmacotherapy that is poorly tolerated, resulting in high discontinuation rates and the need for invasive brain surgeries.

Successful development of T-type calcium channel modulators in ET likely requires a PK profile with a blunted maximum drug exposure, or Cmax, and thoughtful clinical trial design and endpoint selection. We have designed our development program to include careful selection of clinical endpoints, a modified release formulation and dose titration strategy. We believe our modified release formulation for PRAX-944 is positioned to be a first-in-class therapy in ET.

Because of the gatekeeper role of PRAX-944 in regulating neuronal firing patterns in multiple neuronal circuits, we believe PRAX-944 is suitable for potential development across a wide-range of indications in psychiatry and neurology, providing sizable expansion opportunities in addition to ET.

PRAX-562

Our lead rare disease product candidate and third clinical program, PRAX-562, is a potential first-in-class, selective, persistent sodium current blocker for the treatment of a broad range of rare, devastating CNS disorders, such as severe pediatric epilepsy and adult cephalgia. To date, PRAX-562 has demonstrated efficacy in *in-vivo* models with significantly improved tolerability compared to other sodium channel blockers, suggesting an improved therapeutic index.

We have initiated a Phase 1 trial of PRAX-562 in Australia to evaluate the safety, tolerability, PK and effects on an EEG biomarker in up to 129 adult healthy volunteers. We anticipate topline data from this trial in . The clinical development plan for PRAX-562 encompasses exploring the broad potential for the mechanism of action in rare diseases by rapidly identifying proof-of-concept and safety in Short-lasting Unilateral Neuralgiform headache attacks with Conjunctival injection and Tearing, or SUNCT, and Short-lasting Unilateral Neuralgiform headache with Autonomic symptoms, or SUNA, two rare types of cephalgia, and then expanding into a range of rare pediatric Development and Epileptic Encephalopathies, or DEEs.

Preclinical Programs

In addition to our clinical programs, we have one preclinical program and one disclosed discovery program in development for severe genetic epilepsies. We continue to evaluate additional rare disease program opportunities. We anticipate submitting an Investigational New Drug, or IND, application for one of these programs in .

Our Approach

Each of our programs is based on four key principles that we believe will both increase the probability of success and allow us to efficiently translate insights into high-impact therapies for patients and society:

1. *Focus on therapeutic targets identified through human genetics.*
2. *Utilize translational tools to validate the potential of our targets and product candidates.*
3. *Pursue efficient, rigorous clinical development paths to proof-of-concept in humans.*
4. *Apply patient-centric development strategies.*

Our Team

We have attracted a talented team of scientists and researchers in genetics and biology, chemistry and translational medicine as well as business leaders with established track records of successfully executing innovative drug discovery and development programs. Our Chief Executive Officer, Marcio Souza, most recently served as Chief Operating Officer at PTC Therapeutics, Inc. and was instrumental in the development and commercialization of multiple approved products while at NPS Pharmaceuticals, Inc., Shire Human Genetic Therapies Inc. and Sanofi Genzyme Corporation. Our Chief Medical Officer, Bernard Ravina, M.D., previously Chief Medical Officer at Voyager Therapeutics, Inc., is a neurologist and movement disorder specialist who brings decades of neurologic drug development experience from roles at Biogen, the University of Rochester and the NIH's Institute of Neurological Disorders and Stroke. Our Chief Financial Officer, Stuart Chaffee, Ph.D., co-founded Kymera Therapeutics, Inc. and has held multiple senior roles in finance, business development and corporate strategy at Biogen Inc., Zafgen, Inc. and Amgen Inc.

Our Strategy

Our goal is to translate genetic insights into high-impact therapies for millions of people suffering from rare or prevalent CNS disorders characterized by neuronal imbalance. Key components of our strategy include:

- *Efficiently advance PRAX-114 toward regulatory approval and commercialization as a best-in-class monotherapy and adjunctive therapy for MDD and PMD in both acute and maintenance settings.*
- *Efficiently advance PRAX-944 toward regulatory approval and commercialization as a best and first-in-class therapy for ET.*
- *Advance our three disclosed rare disease programs and build our franchise of candidates addressing rare diseases such as DEEs based on precision medicine principles.*
- *Maximize the value of our product candidates through select indication expansion.*
- *Advance our understanding of genetics and neuronal imbalance to maintain our leadership and continue to build our pipeline.*
- *Build a sales and marketing infrastructure to reach prescribers in the United States and maximize the reach of our products globally, alone or in collaboration with others.*

Risks Associated with Our Business

Our ability to implement our business strategy is subject to numerous risks, as more fully described in the section entitled "Risk Factors" immediately following this prospectus summary. These risks include, among others:

- We are a clinical-stage biopharmaceutical company and we have incurred significant losses since our inception. We anticipate that we will continue to incur significant losses for the foreseeable future.
- We will need substantial additional funding, and if we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product discovery and development programs or commercialization efforts.
- Our business substantially depends upon the successful development of PRAX-114, PRAX-944 and PRAX-562. If we are unable to obtain regulatory approval for, and successfully commercialize, PRAX-114, PRAX-944 or PRAX-562, our business may be materially harmed.
- Clinical development involves a lengthy, complex and expensive process, with an uncertain outcome. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and the results of our clinical trials may not satisfy the requirements of the FDA or comparable foreign regulatory authorities.
- The markets for PRAX-114 for MDD and PMD, PRAX-944 for ET, PRAX-562 for multiple rare neurological conditions and any other product candidates we may develop may be smaller than we expect.
- Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit their commercial potential or result in significant negative consequences following regulatory approval, if obtained.
- We face significant competition in an environment of rapid technological and scientific change, and there is a possibility that our competitors may achieve regulatory approval before us or develop therapies that are safer, more advanced or more effective than ours, which may negatively impact our ability to successfully market or commercialize any product candidates we may develop and ultimately harm our financial condition.
- We expect to depend on collaborations with third parties for the research, development and commercialization of certain of the product candidates we may develop. If any such collaborations are not successful, we may not be able to realize the market potential of those product candidates.
- Our success depends in part on our ability to protect our intellectual property. It is difficult and costly to protect our proprietary rights and technology, and we may not be able to ensure their protection.
- We have entered into, and may enter into, license or other collaboration agreements that impose certain obligations on us. If we fail to comply with our obligations under such agreements with third parties, we could lose license rights that may be important to our business.

Corporate Information

We were incorporated under the laws of the State of Delaware on September 22, 2015. Our principal executive office is located at One Broadway, 16th Floor, Cambridge, MA 02142, and our telephone number is (617) 300-8460. Our website address is www.praxismedicines.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus.

Implications of Being an Emerging Growth Company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act, as amended, or the JOBS Act, enacted in April 2012. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- only two years of audited financial statements in addition to any required unaudited interim financial statements with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- reduced disclosure about our executive compensation arrangements;
- no non-binding advisory votes on executive compensation or golden parachute arrangements; and
- exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions for up to five years or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total annual gross revenues of $1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of this offering; (iii) the date on which we have issued more than $1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the U.S. Securities and Exchange Commission. We may choose to take advantage of some but not all of these exemptions. We have taken advantage of reduced reporting requirements in the registration statement of which this prospectus is a part. Accordingly, the information contained herein may be different from the information you receive from other public companies in which you hold stock. Additionally, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption and, therefore, while we are an emerging growth company we will not be subject to new or revised accounting standards at the same time that they become applicable to other public companies that are not emerging growth companies.

THE OFFERING

Common stock offered by us	shares.
Common stock to be outstanding immediately after this offering	shares (shares if the underwriters exercise their option to purchase additional shares in full).
Underwriters' option to purchase additional shares	We have granted a 30-day option to the underwriters to purchase up to an aggregate of additional shares of common stock from us to cover over-allotments, if any, at the public offering price, less underwriting discounts and commissions, on the same terms as set forth in this prospectus.
Use of proceeds	We estimate that we will receive net proceeds from the sale of shares of our common stock in this offering of approximately $, or $ if the underwriters exercise their option to purchase additional shares in full, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. The principal purposes of this offering are to create a public market for our common stock and thereby facilitate future access to the public equity markets, increase our visibility in the marketplace and obtain additional capital. We currently intend to use the net proceeds from this offering to (i) advance PRAX-114 into and through the completion of our first registrational, Phase 2/3, clinical trial in MDD and to complete Part B (PMD) and Part C (longer-term dosing in MDD) of our ongoing Phase 2a clinical trial for PRAX-114; (ii) complete our ongoing Phase 2a clinical trial and initiate a Phase 2/3 randomized, controlled clinical trial for PRAX-944 in ET; (iii) complete our ongoing Phase 1 healthy volunteer trial and initiate the first patient trial for PRAX-562 and (iv) advance other programs in our pipeline and support working capital and other general corporate purposes. For a more complete description of our intended use of the proceeds from this offering, see "Use of Proceeds."
Risk factors	You should carefully read the "Risk Factors" section of this prospectus for a discussion of factors that you should consider before deciding to invest in our common stock.

Conflicts of Interest	Certain affiliates of Blackstone Securities Partners L.P., an underwriter in this offering, beneficially own more than 10% of our outstanding preferred equity prior to the consummation of this offering. As a result, Blackstone Securities Partners L.P. is deemed to have a "conflict of interest" within the meaning of Rule 5121 of the Financial Industry Regulatory Authority, Inc., or FINRA Rule 5121. Accordingly, this offering is being made in compliance with the applicable requirements of FINRA Rule 5121. A qualified independent underwriter is not necessary for this offering pursuant to FINRA Rule 5121(a)(1)(A). See "Underwriting (Conflicts of Interest)."
Proposed Nasdaq Global Market symbol	"PRAX"

The number of shares of our common stock after this offering is based on shares of our common stock outstanding as of June 30, 2020, including shares of our common stock issuable upon the automatic conversion of all outstanding shares of our preferred stock upon the closing of this offering and shares of unvested restricted common stock as of June 30, 2020, and excludes:

- shares of common stock issuable upon the exercise of stock options outstanding as of June 30, 2020, at a weighted average exercise price of $ per share;
- shares of our common stock that will become available for future issuance under our 2020 Stock Option and Incentive Plan, or 2020 Plan, which will become effective in connection with the completion of this offering; and
- shares of our common stock that will become available for future issuance under our 2020 Employee Stock Purchase Plan, which will become effective in connection with the completion of this offering.

Unless otherwise indicated, all information in this prospectus reflects or assumes the following:

- the filing of our amended and restated certificate of incorporation upon the closing of this offering and the effectiveness of our amended and restated by-laws upon the effectiveness of the registration statement of which this prospectus is a part;
- the automatic conversion of all outstanding shares of our preferred stock into an aggregate of shares of common stock upon the closing of this offering;
- no exercise of outstanding options described above;
- a one for reverse split of our common stock effected on ; and
- no exercise by the underwriters of their option to purchase up to additional shares of common stock in this offering.

SUMMARY CONSOLIDATED FINANCIAL DATA

You should read the following summary consolidated financial data together with our consolidated financial statements and the related notes appearing elsewhere in this prospectus and the "Selected Consolidated Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of this prospectus. We have derived the consolidated statement of operations data and consolidated balance sheet data for the years ended December 31, 2018 and 2019 from our audited consolidated financial statements appearing elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in any future period.

	YEAR ENDED DECEMBER 31,	
	2018	2019
	(In thousands, except share and per share data)	
Consolidated Statement of Operations Data:		
Operating expenses:		
Research and development	$ 18,820	$ 29,557
General and administrative	3,899	6,232
Total operating expenses	22,719	35,789
Loss from operations	(22,719)	(35,789)
Total other income (expense):		
Interest income (expense), net	(35)	193
Other expense	(3,648)	–
Total other income (expense), net	(3,683)	193
Loss before provision for (benefit from) income taxes	(26,402)	(35,596)
Provision for (benefit from) income taxes	133	(84)
Net loss	$ (26,535)	$ (35,512)
Accretion and cumulative dividends on redeemable convertible preferred stock	(2,296)	(5,170)
Loss on conversion of convertible notes	(392)	–
Net loss attributable to common stockholders	$ (29,223)	$ (40,682)
Net loss per share attributable to common stockholders, basic and diluted(1)	$ (10.52)	$ (12.43)
Weighted average common shares outstanding, basic and diluted(1)	2,776,947	3,273,420
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)(1)		$ (1.25)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)(1)		28,398,898

(1) See Note 13 to our consolidated financial statements appearing elsewhere in this prospectus for details on the calculation of basic and diluted net loss per share attributable to common stockholders and unaudited pro forma basic and diluted net loss per share attributable to common stockholders.

	AS OF DECEMBER 31, 2019		
	ACTUAL	PRO FORMA(2)	PRO FORMA AS ADJUSTED(3)
	(In thousands)		
Consolidated Balance Sheet Data:			
Cash and cash equivalents	$ 44,815	$ 38,315	$
Working capital(1)	$ 38,678	$ 32,178	$
Total assets	$ 47,694	$ 41,194	$
Redeemable convertible preferred stock	$ 121,121	$ –	$
Accumulated deficit	$ (81,009)	$ (80,886)	$
Total stockholders' (deficit) equity	$ (81,008)	$ 33,613	$

(1) We define working capital as current assets less current liabilities. See our consolidated financial statements and related notes appearing elsewhere in this prospectus for further details regarding our current assets and current liabilities.

(2) The pro forma consolidated balance sheet data give effect to: (i) the repurchase of 5,825,243 shares of our Series C redeemable convertible preferred stock at the original issuance price of $5.15 per share for an aggregate cash repurchase price of $30.0 million on February 19, 2020 and March 3, 2020, (ii) the sale and issuance of 4,563,108 shares of our Series C redeemable convertible preferred stock on April 15, 2020 and May 8, 2020 for gross cash proceeds of $23.5 million and (iii) the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 34,199,861 shares of common stock upon the consummation of this offering.

(3) The pro forma as adjusted balance sheet data give further effect to the issuance and sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma as adjusted information discussed above is illustrative only and will change based on the actual initial public offering price and other terms of this offering determined at pricing. A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' (deficit) equity by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase (decrease) of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, working capital, total assets and total stockholders' (deficit) equity by $ million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all other information in this prospectus, including our consolidated financial statements and related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations," before investing in our common stock. Any of the risk factors we describe below could adversely affect our business, financial condition or results of operations. The market price of our common stock could decline if one or more of these risks or uncertainties actually occur, causing you to lose all or part of the money you paid to buy our common stock. Additional risks that we currently do not know about or that we currently believe to be immaterial may also impair our business. Certain statements below are forward-looking statements. See the section titled "Special Note Regarding Forward-Looking Statements" appearing elsewhere in this prospectus.

Risks Related to Our Financial Position and Need for Additional Capital

We are a clinical-stage biopharmaceutical company and we have incurred significant losses since our inception. We anticipate that we will continue to incur significant losses for the foreseeable future.

Investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate effect or an acceptable safety profile, gain regulatory approval and become commercially viable. We have no products approved for commercial sale and have not generated any revenue to date, and we will continue to incur significant research and development and other expenses related to our clinical development and ongoing operations. As a result, we are not profitable and have incurred losses in each period since our inception. Since our inception, we have devoted substantially all of our financial resources and efforts to research and development, including preclinical studies and our clinical trials. Our financial condition and operating results, including net losses, may fluctuate significantly from quarter to quarter and year to year. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance. Additionally, net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' (deficit) equity and working capital. Our net losses were $35.5 million and $26.5 million for the years ended December 31, 2019 and 2018, respectively. As of December 31, 2019, we had an accumulated deficit of $81.0 million. We expect to continue to incur significant losses for the foreseeable future, and we expect these losses to increase as we continue our research and development of, and seek regulatory approvals for our product candidates in our initial and potential additional indications as well as for other product candidates.

We anticipate that our expenses will increase substantially if and as we:

- continue to develop and conduct clinical trials, including in expanded geographies such as the United States or Europe, for PRAX-114, PRAX-944 and PRAX-562 for our initial and potential additional indications;
- initiate and continue research and development, including preclinical, clinical, and discovery efforts for any future product candidates;
- seek to identify additional product candidates;
- seek regulatory approvals for PRAX-114, PRAX-944 and PRAX-562, or any other product candidates that successfully complete clinical development;
- add operational, financial and management information systems and personnel, including personnel to support our product candidate development and help us comply with our obligations as a public company;

- hire and retain additional personnel, such as clinical, quality control, scientific, commercial and administrative personnel;
- maintain, expand and protect our intellectual property portfolio;
- establish sales, marketing, distribution, manufacturing, supply chain and other commercial infrastructure in the future to commercialize various products for which we may obtain regulatory approval;
- add equipment and physical infrastructure to support our research and development;
- acquire or in-license other product candidates and technologies;
- incur increased costs as a result of operating as a public company.

Our expenses could increase beyond our expectations if we are required by the U.S. Food and Drug Administration, or the FDA, or other regulatory authorities to perform clinical trials in addition to those that we currently expect, or if there are any delays in establishing appropriate manufacturing arrangements for or in completing our clinical trials or the development of any of our product candidates.

We will need substantial additional funding, and if we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product discovery and development programs or commercialization efforts.

Our operations have consumed substantial amounts of cash since inception. We expect to continue to spend substantial amounts to continue the preclinical and clinical development of our current and future programs. If we are able to gain marketing approval for product candidates that we develop, including any indication for which we are developing or may develop PRAX-114, PRAX-944 and PRAX-562, we will require significant additional amounts of cash in order to launch and commercialize such product candidates to the extent that such launch and commercialization are not the responsibility of a future collaborator that we may contract with in the future. In addition, other unanticipated costs may arise in the course of our development efforts. Because the design and outcome of our planned and anticipated clinical trials is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of any product candidates we develop.

Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of researching and developing PRAX-114, PRAX-944 and PRAX-562 for our initial and potential additional indications, as well as other product candidates we may develop;
- the timing and uncertainty of, and the costs involved in, obtaining marketing approvals for PRAX-114, PRAX-944 and PRAX-562 for our initial and potential additional indications, and other product candidates we may develop and pursue;
- the number of future product candidates that we may pursue and their development requirements;
- the number of jurisdictions in which we plan to seek regulatory approvals;
- if approved, the costs of commercialization activities for PRAX-114, PRAX-944 and PRAX-562 for any approved indications, or any other product candidate that receives regulatory approval to the extent such costs are not the responsibility of any future collaborators, including the costs and timing of establishing product sales, marketing, distribution and manufacturing capabilities;
- subject to receipt of regulatory approval, revenue, if any, received from commercial sales of PRAX-114, PRAX-944 and PRAX-562 for any approved indications or any other product candidates;

- the extent to which we in-license or acquire rights to other products, product candidates or technologies;
- our headcount growth and associated costs as we expand our research and development, increase our office space, and establish a commercial infrastructure;
- the costs of preparing, filing and prosecuting patent applications, maintaining and protecting our intellectual property rights, including enforcing and defending intellectual property related claims; and
- the ongoing costs of operating as a public company.

We cannot be certain that additional funding will be available on acceptable terms, or at all. We have no committed source of additional capital and if we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of our product candidates or other research and development initiatives. Any of our current or future license agreements may also be terminated if we are unable to meet the payment or other obligations under the agreements.

We believe that our existing cash and cash equivalents as of December 31, 2019, offset by the $6.5 million net cash outflow from the issuance and repurchase of shares of redeemable convertible preferred stock in 2020, will enable us to fund our operating expenses and capital expenditure requirements through at least the next months. Our estimate may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Further, changing circumstances, some of which may be beyond our control, could cause us to consume capital significantly faster than we currently anticipate, and we may need to seek additional funds sooner than planned.

Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates.

We expect our expenses to increase in connection with our planned operations. Unless and until we can generate a substantial amount of revenue from our product candidates, we expect to finance our future cash needs through public or private equity offerings, debt financings, collaborations, licensing arrangements or other sources, or any combination of the foregoing. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans.

To the extent that we raise additional capital through the sale of common stock, convertible securities or other equity securities, your ownership interest may be diluted, and the terms of these securities could include liquidation or other preferences and anti-dilution protections that could adversely affect your rights as a common stockholder. In addition, debt financing, if available, may result in fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures, creating liens, redeeming stock or declaring dividends, that could adversely impact our ability to conduct our business. In addition, securing financing could require a substantial amount of time and attention from our management and may divert a disproportionate amount of their attention away from day-to-day activities, which may adversely affect our management's ability to oversee the development of our product candidates.

If we raise additional funds through collaborations or marketing, distribution, licensing and royalty arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

We are in the early stages of clinical drug development and have a very limited operating history and no products approved for commercial sale, which may make it difficult to evaluate our current business and predict our future success and viability.

We are a clinical-stage biopharmaceutical company with a very limited operating history, focused on translating genetic insights into the development of high-impact therapies for people with prevalent, as well as rare, CNS disorders characterized by neuronal imbalance. We commenced operations in 2016, have no products approved for commercial sale and have not generated any revenue from product sales. Drug development is a highly uncertain undertaking and involves a substantial degree of risk. We are conducting Phase 1 or Phase 2a clinical trials for our PRAX-114, PRAX-944 and PRAX-562 programs, and have not initiated clinical trials for any of our other current product candidates. To date, our clinical trials have been conducted only in Australia and New Zealand, and we have not initiated or completed a pivotal clinical trial, obtained marketing approval for any product candidates, manufactured a commercial scale product or arranged for a third party to do so on our behalf, or conducted sales and marketing activities necessary for successful product commercialization. Our short operating history as a company makes any assessment of our future success and viability subject to significant uncertainty. We will encounter risks and difficulties frequently experienced by early-stage biopharmaceutical companies in rapidly evolving fields, and we have not yet demonstrated an ability to successfully overcome such risks and difficulties. If we do not address these risks and difficulties successfully, our business will suffer.

Drug development is a highly uncertain undertaking and involves a substantial degree of risk.

We have no products approved for commercial sale. To obtain revenues from the sales of our product candidates that are significant or large enough to achieve profitability, we must succeed, either alone or with third parties, in developing, obtaining regulatory approval for, manufacturing, and marketing therapies with significant commercial success. Our ability to generate revenue and achieve profitability depends on many factors, including:

- completing research and preclinical and clinical development of our product candidates;
- obtaining regulatory approvals and marketing authorizations for product candidates for which we successfully complete clinical development and clinical trials;
- developing a sustainable and scalable manufacturing process for our product candidates, as well as establishing and maintaining commercially viable supply relationships with third parties that can provide adequate products and services to support clinical activities and commercial demand of our product candidates;
- identifying, assessing, acquiring and/or developing new product candidates;
- negotiating favorable terms in any collaboration, licensing or other arrangements into which we may enter;
- launching and successfully commercializing product candidates for which we obtain regulatory and marketing approval, either by collaborating with a partner or, if launched independently, by establishing a sales, marketing and distribution infrastructure;
- obtaining and maintaining an adequate price for our product candidates in the countries where our products are commercialized;
- obtaining adequate reimbursement for our product candidates from payors;
- obtaining market acceptance of our product candidates as viable treatment options;
- addressing any competing technological and market developments;
- receiving milestone and other payments under any future collaboration arrangements;
- maintaining, protecting, expanding and enforcing our portfolio of intellectual property rights, including patents, trade secrets and know-how; and
- attracting, hiring and retaining qualified personnel.

Because of the numerous risks and uncertainties associated with drug development, we are unable to predict the timing or amount of our expenses, or when we will be able to generate any meaningful revenue or achieve or maintain profitability, if ever. In addition, our expenses could increase beyond our current expectations if we are required by the FDA or foreign regulatory agencies to perform studies in addition to those that we currently anticipate, or if there are any delays in any of our or our future collaborators' clinical trials or the development of any of our product candidates. Even if one or more of our product candidates is approved for commercial sale, we anticipate incurring significant costs associated with launching and commercializing any approved product candidate and ongoing compliance efforts.

Due to the significant resources required for the development of our programs, and depending on our ability to access capital, we must prioritize development of certain product candidates. Moreover, we may expend our limited resources on programs that do not yield a successful product candidate or fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

We currently have three product candidates in clinical trials. Together, the development of these programs and product candidates require significant capital investment. Due to the significant resources required for the development of our programs and product candidates, we must focus our programs and product candidates on specific diseases and disease pathways and decide which product candidates to pursue and advance and the amount of resources to allocate to each. Our drug development strategy is to clinically test and seek regulatory approval for our product candidates in indications in which we believe there is the most evidence that we will be able to efficiently generate proof-of-concept data. We then intend to expand to clinical testing and seek regulatory approvals in other neurological and psychiatric disease indications based on genetic and mechanistic overlap with the primary indication. However, even if our product candidates are able to gain regulatory approval in one indication, there is no guarantee that we will be able to expand to other indications, and we may expend significant resources in seeking such approvals.

In addition, we may focus resources on pursuing indications outside of neurology based on the same strategic approach (e.g., human genetics, mechanistic rationale, the availability of translational tools, clinical development path, commercial opportunity) we utilize in determining on which of our discovery programs to focus. Our decisions concerning the allocation of research, development, collaboration, management and financial resources toward particular product candidates or therapeutic areas may not lead to the development of any viable commercial product and may divert resources away from better opportunities. Additionally, we may reprioritize product candidate development plans and activities at any time and delay or terminate development of any product candidates we identify. For example, we have prioritized developing PRAX-144 for major depressive disorder, or MDD, ahead of perimenopausal depression, or PMD. Similarly, our potential decisions to delay, terminate, or collaborate with third parties in respect of certain programs may subsequently also prove to be suboptimal and could cause us to miss valuable opportunities. If we make incorrect determinations regarding the viability or market potential of any of our programs or product candidates or misread trends in the biopharmaceutical industry, in particular for neurological and psychiatric diseases, our business, financial condition, and results of operations could be materially adversely affected. As a result, we may fail to capitalize on viable commercial products or profitable market opportunities, be required to forego or delay pursuit of opportunities with other product candidates or other diseases and disease pathways that may later prove to have greater commercial potential than those we choose to pursue or relinquish valuable rights to such product candidates through collaboration, licensing or other royalty arrangements in cases in which it would have been advantageous for us to invest additional resources to retain sole development and commercialization rights.

Risks Related to Research and Development and the Biopharmaceutical Industry

Our business substantially depends upon the successful development of PRAX-114, PRAX-944 and PRAX-562. If we are unable to obtain regulatory approval for, and successfully commercialize, PRAX-114, PRAX-944 or PRAX-562, our business may be materially harmed.

We currently have no products approved for sale and are investing the majority of our efforts and financial resources in the development of our lead product candidates, PRAX-114 for the treatment of MDD and PMD and PRAX-944 for the treatment of Essential Tremor, or ET. We have also commenced a first-in-human trial of PRAX-562 in healthy volunteers. We plan to initiate a Phase 2 trial for Short-lasting Unilateral Neuralgiform headache with Conjunctival injection and Tearing, or SUNCT, and Short-lasting Unilateral Neuralgiform headache attacks with Autonomic symptoms, or SUNA, to demonstrate rapid clinical proof-of-concept and then subsequently expand into severe pediatric epilepsies. Successful continued development and ultimate regulatory approval of PRAX-114, PRAX-944 and PRAX-562 for our initial and potential additional indications is critical to the future success of our business. We will need to raise sufficient funds for, and successfully enroll and complete, our clinical development programs of PRAX-114 for the treatment of MDD and PMD, PRAX-944 for the treatment of ET, and possibly other diseases, and PRAX-562 for the treatment of a broad range of rare, devastating central nervous system, or CNS, disorders, such as severe pediatric epilepsy and adult cephalgia.

Before we can generate any revenue from sales of PRAX-114, PRAX-944, PRAX-562 or any of our other product candidates, we must undergo additional preclinical and clinical development, regulatory review and approval in one or more jurisdictions. To date, our clinical trials have been conducted exclusively in Australia and, for PRAX-944, in New Zealand as well. We are planning to pursue clinical trials in the United States for all of our clinical programs. We have not submitted Investigational New Drug applications, or INDs, for any of our product candidates with the FDA. In addition, if one or more of our product candidates are approved, we must ensure access to sufficient commercial manufacturing capacity and conduct significant marketing efforts in connection with any commercial launch. These efforts will require substantial investment, and we may not have the financial resources to continue development of our product candidates or commercialization of any products.

We may experience setbacks that could delay or prevent regulatory approval of our product candidates or our ability to commercialize any products, including:

- negative or inconclusive results from our preclinical studies or clinical trials or the clinical trials of others for product candidates similar to ours, leading to a decision or requirement to conduct additional preclinical testing or clinical trials or abandon a program;
- product-related side effects experienced by subjects in our clinical trials or by individuals using drugs or therapeutics similar to our product candidates;
- delays in submitting INDs in the United States or comparable foreign applications or delays or failure in obtaining the necessary approvals from regulators or institutional review boards to commence a clinical trial, or a suspension or termination of a clinical trial once commenced;
- if the FDA or comparable foreign authorities do not accept the earlier preclinical and clinical trial work, then we may need to conduct additional preclinical or clinical trials beyond that which we currently have planned and significant preclinical or clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our drug candidates or allow our competitors to bring products to market before we do and impair our ability to successfully commercialize our drug candidates and may harm our business and results of operations;

- conditions imposed by the FDA or comparable foreign authorities regarding the scope or design of our clinical trials;
- delays in contracting with clinical sites or enrolling subjects in clinical trials, including due to the COVID-19 pandemic;
- delays or interruptions in the supply of materials necessary for the conduct of our clinical trials;
- regulators or institutional review boards, or IRBs, or ethics committees may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- the FDA or other comparable regulatory authorities may disagree with our clinical trial design, including with respect to dosing levels administered in our planned clinical trials, which may delay or prevent us from initiating our clinical trials with our originally intended trial design;
- delays in reaching, or failure to reach, agreement on acceptable terms with prospective trial sites and prospective contract research organizations, or CROs, which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- the number of subjects required for clinical trials of any product candidates may be larger than we anticipate or subjects may drop out of these clinical trials or fail to return for post-treatment follow-up at a higher rate than we anticipate;
- our third-party contractors for preclinical studies or clinical trials may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all, or may deviate from the clinical trial protocol or take actions that could cause clinical sites or clinical investigators to drop out of the trial, which may require that we add new clinical trial sites or investigators;
- due to the impact of the COVID-19 pandemic, we may experience some delays and interruptions to our preclinical studies and clinical trials, we may experience delays or interruptions to our manufacturing supply chain, or we could suffer delays in reaching, or we may fail to reach, agreement on acceptable terms with third-party service providers on whom we rely;
- greater than anticipated clinical trial costs, including as a result of delays or interruptions that could increase the overall costs to finish our clinical trials as our fixed costs are not substantially reduced during delays;
- we may elect to, or regulators, IRBs, Data Safety Monitoring Boards, or DSMBs, or ethics committees may require that we or our investigators, suspend or terminate clinical research or trials for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- we may not have the financial resources available to begin and complete the planned trials, or the cost of clinical trials of any product candidates may be greater than we anticipate;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate to initiate or complete a given clinical trial;
- the FDA or other comparable foreign regulatory authorities may require us to submit additional data such as long-term toxicology studies, or impose other requirements before permitting us to initiate a clinical trial, including because the FDA has not reviewed our preclinical or clinical data, to date, having been developed outside the United States in Australia and New Zealand;
- inability to compete with other therapies;
- poor efficacy of our product candidates during clinical trials;
- unfavorable FDA or other regulatory agency inspection and review of clinical trial sites or manufacturing facilities;

- unfavorable product labeling associated with any product approvals and any requirements for a Risk Evaluation and Mitigation Strategy, or REMS, that may be required by the FDA or comparable requirements in other jurisdictions to ensure the benefits of an individual product outweigh its risks;
- unfavorable acceptance of our clinical trial data by the patient or medical communities or third-party payors;
- failure of our third-party contractors or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner, or at all;
- delays related to the impact or the spread of COVID-19 or other pandemics, including the impact of COVID-19 on the FDA's, or similar foreign regulatory agency's, ability to continue its normal operations;
- delays and changes in regulatory requirements, policy and guidelines, including the imposition of additional regulatory oversight around clinical testing generally or with respect to our technology in particular; or
- varying interpretations of data by the FDA and similar foreign regulatory agencies.

We do not have complete control over many of these factors, including certain aspects of clinical development and the regulatory submission process, potential threats to our intellectual property rights and our manufacturing, marketing, distribution and sales efforts or that of any future collaborator.

In addition, of the large number of drugs in development in the biopharmaceutical industry, only a small percentage result in the submission of a marketing application, such as a new drug application, or NDA, to the FDA, and even fewer are approved for commercialization. Furthermore, even if we do receive regulatory approval for PRAX-144, PRAX-944 or PRAX-562 for any indication, any such approval may be subject to limitations on the indications or uses or patient populations for which we may market the product. Accordingly, even if we are able to obtain the requisite financing to continue to fund our development programs, we cannot assure that we will successfully develop or commercialize PRAX-114, PRAX-944 or PRAX-562 for any indication. If we or any of our future collaborators are unable to develop, or obtain regulatory approval for, or, if approved, successfully commercialize PRAX-114, PRAX-944 or PRAX-562 for our initial or potential additional indications, we may not be able to generate sufficient revenue to continue our business. In addition, our failure to demonstrate positive results in our clinical trials in any indication for which we are developing PRAX-114, PRAX-944 and PRAX-562 could adversely affect our development efforts for PRAX-114, PRAX-944 and PRAX-562 in other indications.

Clinical development involves a lengthy, complex and expensive process, with an uncertain outcome. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and the results of our clinical trials may not satisfy the requirements of the FDA or comparable foreign regulatory authorities.

To obtain the requisite regulatory approvals to commercialize any product candidates, we must demonstrate through extensive preclinical studies and clinical trials that our product candidates are safe and effective in humans. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. In particular, in the U.S. where we hope to advance our product development efforts in the future, the general approach for FDA approval of a new drug is dispositive data from two well-controlled, Phase 3 clinical trials of the relevant drug in the relevant patient population. Phase 3 clinical trials typically involve hundreds of patients, have significant costs and take years to complete. A product candidate can fail at any stage of testing, even after observing promising signs of activity in earlier preclinical studies or clinical trials. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. In addition, initial success in clinical trials may not be indicative of results obtained when such trials are

completed. There is typically an extremely high rate of attrition from the failure of product candidates proceeding through clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy profile despite having progressed through preclinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or emergence of unacceptable safety issues, notwithstanding promising results in earlier trials. Most product candidates that commence clinical trials are never approved as products and there can be no assurance that any of our future clinical trials will ultimately be successful or support further clinical development of PRAX-114, PRAX-944, PRAX-562 or any of our other product candidates. Product candidates that appear promising in the early phases of development may fail to reach the market for several reasons, including:

- preclinical studies or clinical trials may show the product candidates to be less effective than expected (e.g., a clinical trial could fail to meet its primary endpoint(s)) or to have unacceptable side effects or toxicities;
- failure to establish clinical endpoints that applicable regulatory authorities would consider clinically meaningful;
- failure to receive the necessary regulatory approvals;
- manufacturing issues, formulation issues, pricing or reimbursement issues or other factors that make a product candidate uneconomical; and
- the proprietary rights of others and their competing products and technologies that may prevent one of our product candidates from being commercialized.

In addition, differences in trial design between early-stage clinical trials and later-stage clinical trials make it difficult to extrapolate the results of earlier clinical trials to later clinical trials. Moreover, clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in clinical trials have nonetheless failed to obtain marketing approval of their products.

Additionally, some of our trials may be open-label studies, where both the patient and investigator know whether the patient is receiving the investigational product candidate or either an existing approved drug or placebo. Most typically, open-label clinical trials test only the investigational product candidate and sometimes do so at different dose levels. Open-label clinical trials are subject to various limitations that may exaggerate any therapeutic effect as patients in open-label clinical trials are aware when they are receiving treatment. For example, prior MDD studies have exhibited a high placebo effect. In addition, open-label clinical trials may be subject to an “investigator bias” where those assessing and reviewing the physiological outcomes of the clinical trials are aware of which patients have received treatment and may interpret the information of the treated group more favorably given this knowledge. Therefore, it is possible that positive results observed in open-label trials will not be replicated in later placebo-controlled trials. To date, we have conducted some trials as open-label trials, including with PRAX-114 and PRAX-944. Additionally, the trial design differences and placebo effects that may be possible in clinical research for the indications we are studying may make it difficult to extrapolate the results of earlier clinical trials to later clinical trials or to interpret the clinical data in any of our trials.

The standards that foreign regulatory authorities and the FDA use when regulating us require judgment and can change, which makes it difficult to predict with certainty how they will be applied. Although we are initially focusing our efforts on development of small molecule drug products, we intend to develop a potential antisense oligonucleotide candidate for genetic epilepsies and may in the future pursue development of biological products, each of which could make us subject to additional regulatory requirements. Any analysis we perform of data from preclinical and clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent

regulatory approval. The FDA's acceptance of data from clinical trials outside of the United States is subject to certain conditions, including that the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with good clinical practice, that the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful, and that the trials are conducted in compliance with all applicable U.S. laws and regulations.

We may also encounter unexpected delays or increased costs due to new government regulations. Examples of such regulations include future legislation or administrative action, or changes in foreign regulatory authority or FDA policy during the period of product development and regulatory review. It is impossible to predict whether legislative changes will be enacted, or whether foreign or FDA regulations, guidance or interpretations will be changed, or what the impact of such changes, if any, may be. In the United States, where we plan to develop our candidates in the future, the FDA may also require a panel of experts, referred to as an Advisory Committee, to deliberate on the adequacy of the safety and efficacy data to support approval. The opinion of the Advisory Committee, although not binding on the FDA, may have a significant impact on our ability to obtain approval of any product candidates that we develop.

If we seek to continue conducting clinical trials in foreign countries or pursue marketing approvals in foreign jurisdictions, we must comply with numerous foreign regulatory requirements governing, among other things, the conduct of clinical trials, manufacturing and marketing authorization, pricing and third-party reimbursement. The foreign regulatory approval process varies among countries and jurisdictions and may include all of the risks associated with FDA approval described above as well as risks attributable to the satisfaction of local regulations in foreign jurisdictions. Moreover, the time required to obtain approval may differ jurisdiction-to-jurisdiction from that required to obtain FDA approval. Approval by foreign regulatory authorities does not ensure approval by the FDA and, similarly, approval by the FDA does not ensure approval by regulatory authorities outside the United States.

Successful completion of clinical trials is a prerequisite to submitting a marketing application to foreign regulatory authorities or the FDA, for each product candidate and, consequently, the ultimate approval and commercial marketing of any product candidates. We may experience negative or inconclusive results, or regulators may be unwilling to accept preclinical or clinical data obtained in foreign jurisdictions, which may result in our deciding, or our being required by regulators, to conduct additional clinical studies or trials or abandon some or all of our product development programs, which could have a material adverse effect on our business.

Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit their commercial potential or result in significant negative consequences following regulatory approval, if obtained.

Undesirable side effects caused by PRAX-114, PRAX-944, PRAX-562 or any future product candidate could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. In addition, many compounds that have initially showed promise in clinical or earlier stage testing are later found to cause undesirable or unexpected side effects that prevented further development of the compound. Additionally, the composition of our product candidates or learnings in preclinical studies or clinical trials may result in contraindications for any product candidates for which we may obtain regulatory approval.

If unacceptable side effects arise in the development of our product candidates, we, foreign regulatory authorities, or, in the future, the FDA, the IRBs, DSMBs or independent ethics committees at

the institutions in which our trials are conducted could suspend or terminate our preclinical studies or clinical trials or foreign regulatory authorities or the FDA could order us to cease preclinical studies or clinical trials or deny approval of our product candidates for any or all targeted indications.

Treatment-emergent side effects that are deemed to be drug-related could also affect subject recruitment or the ability of enrolled subjects to complete the trial or result in potential product liability claims. Undesirable side effects in one of our clinical trials for our product candidates in one indication could adversely affect enrollment in clinical trials, regulatory approval and commercialization of our product candidates in other indications. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff. Any of these occurrences may harm our business, financial condition and prospects significantly.

Moreover, clinical trials of our product candidates are conducted in carefully defined sets of patients who have agreed to enter into clinical trials. Consequently, it is possible that our clinical trials, or those of any future collaborator, may indicate an apparent positive effect of a product candidate that is greater than the actual positive effect, if any, or alternatively fail to identify undesirable side effects. Clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients, rare and severe side effects of our product candidates may only be uncovered with a significantly larger number of patients exposed to the product candidate. If our product candidates receive marketing approval and we or others identify undesirable side effects caused by such product candidates (or any other similar products) after such approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit their approval of such product candidates;
- regulatory authorities may require the addition of labeling statements, such as a Boxed Warning or contraindications;
- we may be required to change the way such product candidates are distributed or administered, or change the labeling of the product candidates;
- FDA may require a REMS plan to mitigate risks, which could include medication guides, physician communication plans or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools, and regulatory authorities in other jurisdictions may require comparable risk mitigation plans;
- we may be subject to regulatory investigations and government enforcement actions;
- the FDA or a comparable foreign regulatory authority may require us to conduct additional clinical trials or costly post-marketing testing and surveillance to monitor the safety and efficacy of the product;
- we could be sued and held liable for injury caused to individuals exposed to or taking our product candidates; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidates and could substantially increase the costs of commercializing our product candidates, if approved, and significantly impact our ability to successfully commercialize our product candidates and generate revenues.

If we encounter difficulties enrolling patients in our future clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the study until its conclusion.

Patient enrollment is affected by many factors, including:

- the patient eligibility criteria defined in the protocol;
- the size of the patient population required for analysis of the trial's primary endpoints;
- in the case clinical trials focused on rare disease, the small size of the patient population and the potential of a patient being undiagnosed or misdiagnosed;
- the proximity of patients to trial sites;
- the design of the trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- competing clinical trials and clinicians' and patients' perceptions as to the potential advantages and risks of the product candidate being studied in relation to other available therapies, including any new drugs that may be approved for the indications that we are investigating;
- the impacts of the COVID-19 pandemic on clinical trial sites, personnel and patient travel;
- our ability to obtain and maintain patient consents; and
- the risk that patients enrolled in clinical trials will drop out of the trials before completion.

In addition, our clinical trials will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials in such clinical trial site.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays or might require us to abandon one or more clinical trials altogether. Delays in patient enrollment may result in increased costs, affect the timing or outcome of the planned clinical trials, product candidate development and approval process and jeopardize our ability to seek and obtain the regulatory approval required to commence product sales and generate revenue, which could prevent completion of these trials, adversely affect our ability to advance the development of our product candidates, cause the value of our company to decline and limit our ability to obtain additional financing if needed.

We are also required to register certain clinical trials and post the results of completed clinical trials on a government-sponsored database, such as www.ClinicalTrials.gov in the United States, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Interim, topline and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available, and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publicly disclose preliminary, interim or topline data from our clinical trials. These interim updates are based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results,

once additional data have been received and fully evaluated. Topline data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously reported. As a result, topline data should be viewed with caution until the final data are available. In addition, we may report interim analyses of only certain endpoints rather than all endpoints. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Adverse changes between interim data and final data could significantly harm our business and prospects. Some of our trials may be open-label studies, where both the patient and investigator know whether the patient is receiving the investigational product candidate or either an existing approved drug or placebo. Open-label clinical trials are subject to various limitations that may exaggerate any therapeutic effect as patients in open-label clinical trials are aware when they are receiving treatment. For example, prior MDD studies have exhibited a high placebo effect. In addition, open-label clinical trials may be subject to an "investigator bias" where those assessing and reviewing the physiological outcomes of the clinical trials are aware of which patients have received treatment and may interpret the information of the treated group more favorably given this knowledge. Therefore, it is possible that positive results observed in open-label trials will not be replicated in later placebo-controlled trials. Additionally, the trial design differences and placebo effects that may be possible in clinical research for the indications we are studying may make it difficult to extrapolate the results of earlier clinical trials to later clinical trials or to interpret the clinical data in any of our trials. Further, additional disclosure of interim data by us or by our competitors in the future could result in volatility in the price of our common stock.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is typically selected from a more extensive amount of available information. You or others may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure, and any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular product candidate or our business. If the preliminary or topline data that we report differ from late, final or actual results, or if others, including the FDA and comparable foreign regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize our product candidates may be harmed, which could harm our business, financial condition, results of operations and prospects.

The markets for PRAX-114 for MDD and PMD, PRAX-944 for ET, PRAX-562 for multiple rare neurological conditions and any other product candidates we may develop may be smaller than we expect.

Our estimates of the potential market opportunity for PRAX-114 for the treatment of MDD and PMD, PRAX-944 for the treatment of ET, PRAX-562 for the treatment of multiple rare neurological conditions, including epilepsy, cephalgias and pain, as well as any other product candidates, include several key assumptions based on our industry knowledge, industry publications and third-party research reports. There can be no assurance that any of these assumptions are, or will remain, accurate. If the actual market for PRAX-114, PRAX-944 and PRAX-562 for these or other indications, or for any other product candidate we may develop, is smaller than we expect, our revenues, if any, may be limited and it may be more difficult for us to achieve or maintain profitability.

We may not be successful in our efforts to identify or discover additional product candidates in the future.

Our research programs may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development or commercialization for a number of reasons, including:

- our inability to design such product candidates with the pharmacological or pharmacokinetic properties that we desire; or
- potential product candidates may, on further study, be shown to have harmful side effects or other characteristics that indicate that they are unlikely to be medicines that will receive marketing approval and achieve market acceptance.

Research programs to identify new product candidates require substantial technical, financial and human resources. If we are unable to identify suitable compounds for preclinical and clinical development, we will not be able to obtain product revenue in future periods, which likely would result in significant harm to our financial position and adversely impact our stock price.

We may in the future conduct clinical trials for our product candidates in the United States, Europe or other jurisdictions, and the FDA, the European Medicines Agency, or EMA, and applicable foreign regulatory authorities may not accept data from trials conducted outside those respective jurisdictions.

We may in the future choose to conduct one or more of our clinical trials in the United States, Europe or in other foreign jurisdictions outside of Australia and New Zealand where our trials currently are being conducted for PRAX-114, PRAX-944 and PRAX-562. The acceptance of study data from preclinical studies and clinical trials conducted outside those jurisdictions may be subject to certain conditions for acceptance. For example, in cases where data from foreign clinical trials are intended to serve as the basis for marketing approval in the United States, the FDA will generally not approve the application on the basis of foreign data alone unless (i) the data are applicable to the United States population and United States medical practice; and (ii) the trials were performed by clinical investigators of recognized competence and pursuant to Good Clinical Practices, or GCP, regulations. Additionally, the FDA's clinical trial requirements, including sufficient size of patient populations and statistical powering, must be met. Many foreign regulatory bodies, such as the EMA, have similar approval requirements. In addition, such foreign trials would be subject to the applicable local laws of the foreign jurisdictions where the trials are conducted. There can be no assurance that the FDA, EMA or any applicable foreign regulatory authority will accept data from trials conducted outside of the United States or the applicable jurisdiction. If the FDA, EMA or any applicable foreign regulatory authority does not accept such data, it would result in the need for additional trials, which would be costly and time-consuming and delay aspects of our business plan, and which may result in our product candidates not receiving approval or clearance for commercialization in the applicable jurisdiction.

We plan to seek orphan drug designation for one or more of our product candidates, but we may be unable to obtain or maintain such a designation or the benefits associated with orphan drug status, including marketing exclusivity, which may cause our revenue, if any, to be reduced.

In the United States, under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, defined as a disease or condition with a patient population of fewer than 200,000 in the United States, or a patient population greater than 200,000 in the United States when there is no reasonable expectation that the cost of developing and making available the drug or biologic in the United States will be recovered from sales in the United States for that drug or biologic. Orphan drug designation must be requested and granted by the FDA before a new NDA is submitted. In the United States, orphan drug designation entitles a party to financial

incentives such as opportunities for grant funding towards clinical trial costs, tax advantages, and user-fee waivers. After the FDA grants orphan drug designation, it will disclose publicly the generic identity of the drug and its potential orphan use. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. Such a designation may also be revoked by the FDA in certain circumstances, such as if the agency finds that the applicant's request for designation request omitted material information required under the Orphan Drug Act and its implementing regulations.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular active ingredient for the disease for which it has such designation, the product is entitled to orphan product exclusivity. This means that the FDA may not approve any other marketing applications for the same drug and the same indication for seven years, except in limited circumstances such as a showing of clinical superiority to the product with orphan exclusivity or if FDA finds that the holder of the orphan exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan product to meet the needs of patients with the disease or condition for which the drug was designated. Furthermore, the FDA can waive orphan exclusivity if the applicant is unable to manufacture sufficient supply of the product subject to a period of orphan drug marketing exclusivity. Because we are developing PRAX-562 and PRAX-222 for indications we believe to be rare, we expect to pursue orphan designations for our candidates as applicable in the jurisdictions where development activities are planned.

A Breakthrough Therapy Designation by the FDA may not lead to a faster development or regulatory review or approval process, and does not increase the likelihood that our product candidates will receive marketing approval.

We do not currently have Breakthrough Therapy Designation for any of our product candidates, but we may seek Breakthrough Therapy Designation for any product candidate that we plan to develop in the United States if we believe the qualifying criteria for such a designation can be met. A Breakthrough Therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over currently approved therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For drugs that have been designated as Breakthrough Therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Drugs designated as Breakthrough Therapies by the FDA are also eligible for accelerated approval and priority review.

The FDA has discretion to determine whether the criteria for a Breakthrough Therapy has been met and whether to grant a Breakthrough Therapy Designation to an investigational product. Accordingly, even if we believe a product candidate we develop meets the criteria for designation as a Breakthrough Therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of Breakthrough Therapy Designation for a product candidate may not result in a faster development process, review or approval compared to drugs considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, even after granting Breakthrough Therapy Designation to our product candidates, the FDA may later decide that the drugs no longer meet the conditions for qualification and withdraw the designation.

A Fast Track Designation by the FDA, even if granted for any of our product candidates, may not lead to a faster development or regulatory review or approval process and does not increase the likelihood that our product candidates will receive marketing approval.

We do not currently have Fast Track Designation for any of our product candidates, but we may seek such a designation for the product candidates we plan to develop in the United States if we

believe the qualifying criteria for such a designation have been met. If a product is intended for the treatment of a serious or life-threatening condition and preclinical or clinical data demonstrate the potential to address an unmet medical need for this condition, the product sponsor may apply for Fast Track Designation. The FDA has broad discretion whether or not to grant this designation, so even if we believe a particular product candidate is eligible for this designation, we cannot assure that the FDA would decide to grant it. Even if we do receive Fast Track Designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw the Fast Track Designation if it believes that the designation is no longer supported by data from our clinical development program. Many drugs that have received Fast Track Designation have failed to obtain regulatory approval.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, but a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA grants approval of a product candidate, comparable regulatory authorities in other jurisdictions, including Australia and Europe, must also approve the manufacturing, marketing and sale of the product candidate in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from those in the United States, including additional preclinical studies or clinical trials as clinical trials conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. In many jurisdictions outside the United States, a product candidate must also be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our products is also subject to governmental approval.

Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. If we or any partner we work with fail to comply with the regulatory requirements in international markets or fail to receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed.

Any of our current and future product candidates for which we, or any future collaborators, obtain regulatory approval in the future will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense. If approved, our product candidates could be subject to post-marketing restrictions or withdrawal from the market and we, or any future collaborators, may be subject to substantial penalties if we, or they, fail to comply with regulatory requirements or if we, or they, experience unanticipated problems with our products following approval.

Any of our product candidates for which we, or any future collaborators, obtain regulatory approval, as well as the manufacturing processes, post-approval studies, labeling, advertising and promotional activities for such product, among other things, will be subject to ongoing requirements of and review by the FDA, if approved in the United States, and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. We and our contract manufacturers will also be subject to user fees and periodic inspection by the FDA in the United States and other regulatory authorities, including similar regulatory authorities in foreign jurisdictions, to monitor compliance with these

requirements and the terms of any product approval we may obtain. Even if regulatory approval of a product candidate is granted, the approval may be subject to limitations on the indications or uses for which the product may be marketed or to the conditions of approval, including the potential requirement in the United States to implement a REMS.

Regulatory authorities may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of a product. In the United States, the FDA and other agencies, including the Department of Justice, closely regulate and monitor the post-approval marketing and promotion of products to ensure that they are manufactured, marketed and distributed only for the approved indications and in accordance with the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use of approved drug products. However, companies may share truthful and not misleading information that is otherwise consistent with a product's FDA approved labeling. If we, or any future collaborators, do not market any of our product candidates for which we, or they, receive regulatory approval for only their approved indications, we, or they, may be subject to warnings or enforcement action for off-label marketing if it is alleged that we are doing so. In the United States, violation of the Federal Food, Drug and Cosmetic Act and other statutes relating to the promotion and advertising of prescription drugs may lead to investigations or allegations of violations of federal and state health care fraud and abuse laws and state consumer protection laws, including the federal False Claims Act, or the FCA.

In addition, later discovery of previously unknown adverse events or other problems with our products or their manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on the manufacturing of such products;
- restrictions on the labeling or marketing of such products;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;
- warning letters or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- restrictions on coverage by third-party payors;
- fines, restitution or disgorgement of profits or revenues;
- exclusion from U.S. federal health care programs such as Medicare and Medicaid;
- suspension or withdrawal of regulatory approvals;
- refusal to permit the import or export of products;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

Even if we, or any future collaborators, obtain regulatory approvals for our product candidates, the terms of approvals and ongoing regulation of our products may limit how we manufacture and market our products, which could impair our ability to generate revenue.

Once regulatory approval has been granted, an approved product and its manufacturer and marketer are subject to ongoing review and extensive regulation. We, and any future collaborators, must therefore comply with requirements concerning advertising and promotion for any of our product

candidates for which we or they obtain regulatory approval. Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved labeling. Thus, we and any future collaborators will not be able to promote any products we develop for indications or uses for which they are not approved.

In addition, manufacturers of approved products and those manufacturers' facilities are required to comply with extensive regulatory requirements, including under FDA authorities ensuring that quality control and manufacturing procedures conform to current Good Manufacturing Practices, or cGMPs, which include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation and reporting requirements. We, our contract manufacturers, any future collaborators and their contract manufacturers could be subject to periodic unannounced inspections by regulatory authorities to monitor and ensure compliance with cGMPs. Despite our efforts to inspect and verify regulatory compliance, one or more of our third-party manufacturing vendors may be found on regulatory inspection to be not in compliance with cGMP requirements, which may result in shutdown of the third-party vendor or invalidation of drug product lots or processes. In some cases, a product recall may be warranted or required, which would materially affect our ability to supply and market our drug products.

Accordingly, assuming we, or any future collaborators, receive regulatory approval for one or more of our product candidates, we, and any future collaborators, and our and their contract manufacturers will continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance and quality control.

If we, or any future collaborators, are not able to comply with post-approval regulatory requirements, we, or any future collaborators, could have the regulatory approvals for our products withdrawn by regulatory authorities and our, or any future collaborators', ability to market any future products could be limited, which could adversely affect our ability to achieve or sustain profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on our operating results and financial condition.

Changes in regulatory requirements or regulatory guidance or unanticipated events during our non-clinical studies and clinical trials of our product candidates may occur, which may result in changes to non-clinical studies and clinical trial protocols or the need for additional non-clinical studies and clinical trials, which could result in increased costs to us and could delay our development timelines.

Changes in regulatory requirements or regulatory guidance or unanticipated events during our non-clinical studies and clinical trials may force us to amend non-clinical studies and clinical trial protocols or the applicable regulatory authority may impose additional non-clinical studies and clinical trial requirements. Amendments or changes to our clinical trial protocols would generally require resubmission to the applicable regulatory authority and IRBs for review and approval, which may adversely impact the cost, timing or successful completion of clinical trials. These decisions may increase costs, and cause us not to meet expected timelines and, correspondingly, our business and financial prospects could be adversely affected. Similarly, amendments to our non-clinical studies may adversely impact the cost, timing or successful completion of those non-clinical studies. If we experience delays completing, or if we terminate, any of our non-clinical studies or clinical trials, or if we are required to conduct additional non-clinical studies or clinical trials, the development pathway, and ultimately the commercial prospects, for our product candidates may be harmed and our ability to generate product revenue from resulting products, if any, will be delayed.

We could be subject to product liability lawsuits based on the use of our product candidates in clinical testing or, if obtained, following our products' marketing approval and commercialization. Product liability lawsuits brought against us or any of our future collaborators could divert our

resources and attention, require us to cease clinical testing, cause us to incur substantial liabilities or limit commercialization of our product candidates.

We are exposed to potential product liability and professional indemnity risks that are inherent in the research, development, manufacturing, marketing and use of biopharmaceutical products. Currently, we have no products that have been approved for commercial sale; however, the use of our product candidates by us and any collaborators in clinical trials may expose us to liability claims. We will face an even greater risk if product candidates are approved by regulatory authorities and introduced commercially. Product liability claims may be brought against us or our partners if any product candidate we develop allegedly causes injury or is found to be otherwise unsuitable for human use during product testing, manufacturing, marketing or sale. Any such product liability claim may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection acts. Such claims could be made by participants enrolled in our clinical trials, patients, health care providers, biopharmaceutical companies, our collaborators or others using, administering or selling any of our future approved products. If we cannot successfully defend ourselves against any such claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates. Even successful defense would require significant financial and management resources.

Regardless of the merits or eventual outcome, product liability claims may result in:

- decreased demand for any of our future approved products;
- injury to our reputation;
- withdrawal of clinical trial participants;
- termination of clinical trial sites or entire trial programs;
- significant litigation costs;
- substantial monetary awards to, or costly settlements with, patients or other claimants;
- product recalls or a change in the indications for which any approved drug products may be used;
- loss of revenue;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize our product candidates.

Although the clinical trial process is designed to identify and assess potential side effects, clinical development does not always fully characterize the safety and efficacy profile of a new medicine, and it is always possible that a drug, even after regulatory approval, may exhibit unforeseen side effects. If our product candidates were to cause adverse side effects during clinical trials or after approval, we may be exposed to substantial liabilities. Physicians and patients may not comply with any warnings that identify known potential adverse effects and patients who should not use our product candidates. If any of our product candidates are approved for commercial sale, we will be highly dependent upon consumer perceptions of us and the safety and quality of our products. We could be adversely affected if we are subject to negative publicity associated with illness or other adverse effects resulting from physicians' or patients' use or misuse of our products or any similar products distributed by other companies.

Although we maintain product liability insurance coverage including clinical trial liability, this insurance may not fully cover potential liabilities that we may incur. The cost of any product liability litigation or other proceeding, even if resolved in our favor, could be substantial. We will need to increase our insurance coverage if we commercialize any product that receives regulatory approval. In

addition, insurance coverage is becoming increasingly expensive. If we are unable to maintain sufficient insurance coverage at an acceptable cost or to otherwise protect against potential product liability claims, it could prevent or inhibit the development and commercial production and sale of our product candidates, which could harm our business, financial condition, results of operations and prospects.

We face significant competition in an environment of rapid technological and scientific change, and there is a possibility that our competitors may achieve regulatory approval before us or develop therapies that are safer, more advanced or more effective than ours, which may negatively impact our ability to successfully market or commercialize any product candidates we may develop and ultimately harm our financial condition.

The development and commercialization of new drug products is highly competitive. We may face competition with respect to any product candidates that we seek to develop or commercialize in the future from biopharmaceutical companies worldwide. Potential competitors also include academic institutions, government agencies, and other public and private research organizations that conduct research, seek patent protection, and establish collaborative arrangements for research, development, manufacturing and commercialization.

Specifically, we face competition with $GABA_A$ receptor modulator programs in development targeting MDD, including that of SAGE Therapeutics, as well as other programs in clinical development targeting other mechanisms of action and approved therapies such as selective serotonin reuptake inhibitors, or SSRIs; T-type calcium channel inhibitor programs in development targeting ET, including that of Jazz Pharmaceuticals, as well as other programs in clinical development targeting other mechanisms of action, and approved therapies, such as propranolol, and off-label therapies, such as primidone; and sodium channel blocker programs in development for DEE, including those of SK-Pharma and Xenon Pharmaceuticals, as well as other programs in clinical development targeting other mechanisms of action, and approved therapies including other existing ion channel blockers.

If any of these competitors or competitors for our other product candidates receive FDA approval before we do, our product candidates would not be the first treatment on the market, and our market share may be limited. In addition to competition from other companies targeting our target indications, any products we may develop may also face competition from other types of therapies.

Many of our current or potential competitors, either alone or with their strategic partners, have:

- greater financial, technical and human resources than we have at every stage of the discovery, development, manufacture and commercialization of products;
- more extensive experience in preclinical testing, conducting clinical trials, obtaining regulatory approvals, and in manufacturing, marketing and selling drug products;
- products that have been approved or are in late stages of development; and
- collaborative arrangements in our target markets with leading companies and research institutions.

Mergers and acquisitions in the biopharmaceutical industry may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are

more convenient or are less expensive than any products that we may develop. Furthermore, currently approved products could be discovered to have application for treatment of our targeted disease indications or similar indications, which could give such products significant regulatory and market timing advantages over our product candidates. Our competitors also may obtain FDA, EMA or other comparable foreign regulatory approval for their products more rapidly than we may obtain approval for ours and may obtain orphan product exclusivity from the FDA for indications that we are targeting, which could result in our competitors establishing a strong market position before we are able to enter the market. Additionally, products or technologies developed by our competitors may render our potential product candidates uneconomical or obsolete and we may not be successful in marketing any product candidates we may develop against competitors.

In addition, we could face litigation or other proceedings with respect to the scope, ownership, validity and/or enforceability of our patents relating to our competitors' products and our competitors may allege that our products infringe, misappropriate or otherwise violate their intellectual property. The availability of our competitors' products could limit the demand, and the price we are able to charge, for any products that we may develop and commercialize.

Risks Related to the Commercialization of our Product Candidates

Any product candidate for which we obtain marketing approval will be subject to extensive post-marketing regulatory requirements and could be subject to post-marketing restrictions or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, when and if any of them are approved.

Even if the FDA or a comparable foreign regulatory authority approves any of our product candidates, we will be subject to ongoing regulatory requirements in the applicable jurisdictions for manufacturing, labeling, packaging, storage, advertising, promotion, sampling, record-keeping, conduct of post-marketing studies and submission of safety, efficacy and other post-market information. In addition, we will be subject to continued compliance with cGMP and GCP requirements for any clinical trials that we conduct post-approval.

Manufacturers and their facilities are required to comply with extensive regulatory authority requirements, including ensuring that quality control and manufacturing procedures conform to cGMP regulations. As such, we and our contract manufacturers will be subject to continual review and inspections to assess compliance with cGMP and adherence to commitments made in any marketing application, and previous responses to inspection observations. Accordingly, we and others with whom we work must continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, production and quality control.

Any regulatory approvals that we receive for our product candidates may be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials and surveillance to monitor the safety and efficacy of the product candidate. In the United States, the FDA may also require a REMS program as a condition of approval of our product candidates, which could entail requirements for long-term patient follow-up, a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. In addition, if the FDA or a comparable foreign regulatory authority approves our product candidates, we will have to comply with requirements including submissions of safety and other post-marketing information and reports and registration.

In the United States, the FDA may withdraw approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later

discovery of previously unknown problems with our product candidates, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information or other restrictions; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution restrictions or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the manufacturing of our products, the approved manufacturers or the manufacturing process;
- withdrawal of the product from the market or voluntary product recalls;
- requirements to conduct post-marketing studies or clinical trials;
- fines, restitution or disgorgement of profits or revenues;
- warning or untitled letters from the FDA or comparable notice of violations from foreign regulatory authorities;
- suspensions of any of our ongoing clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or suspension or withdrawal of marketing approvals;
- product seizure or detention or refusal to permit the import or export of products; and
- consent decrees, injunctions or the imposition of civil or criminal penalties.

Regulatory authorities strictly regulate marketing, labeling, advertising and promotion of products that are placed on the market. Products may be promoted only for the approved indications and in accordance with the provisions of the approved label. However, in the United States, companies may share truthful and not misleading information that is not inconsistent with the labeling. The FDA and other regulatory authorities actively enforce the laws and regulations prohibiting the promotion of off-label uses and a company that is found to have improperly promoted off-label uses may be subject to significant liability. Violations of the Federal Food, Drug, and Cosmetic Act relating to the promotion of prescription drugs may also lead to investigations alleging violations of federal and state health care fraud and abuse laws, as well as state consumer protection laws. Accordingly, to the extent we receive marketing approval for one or more of our product candidates, we and our third-party partners will continue to expend time, money and effort in all areas of regulatory compliance, including promotional and labeling compliance, manufacturing, production, product surveillance and quality control.

The policies of the FDA and of other regulatory authorities may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow to, or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

Our commercial success depends upon attaining significant market acceptance of our drug product candidates, if approved, among physicians, patients, third-party payors and other members of the medical community.

Even if any of the product candidates we develop receives marketing approval, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payors, such as Medicare and Medicaid programs and managed care organizations in the United States, and others in the medical community. In addition, the availability of coverage by third-party payors may be affected by existing and future health care reform measures designed to reduce the cost of health care. If the

product candidates we develop do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable.

The degree of market acceptance of any product candidate, if approved for commercial sale, will depend on a number of factors, including:

- efficacy and potential advantages compared to alternative treatments;
- the ability to offer our products, if approved, for sale at competitive prices;
- relative convenience and ease of administration compared to alternative treatments;
- perceptions by the medical community, physicians, and patients, regarding the safety and effectiveness of our products and the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the size of the market for such product candidate, based on the size of the patient subsets that we are targeting, in the territories for which we gain regulatory approval;
- the recommendations with respect to our product candidates in guidelines published by various scientific organizations applicable to us and our product candidates;
- the strength of sales, marketing and distribution support;
- the timing of any such marketing approval in relation to other product approvals;
- any restrictions on concomitant use of other medications;
- support from patient advocacy groups;
- the ability to obtain sufficient third-party coverage and adequate reimbursement; and
- the prevalence and severity of any side effects.

If government and other third-party payors do not provide coverage and adequate reimbursement levels for any products we commercialize, market acceptance and commercial success would be reduced.

The successful commercialization of our product candidates in the United States will depend in part on the extent to which third-party payors, including governmental authorities and private health insurers, provide coverage and adequate reimbursement levels, as well as implement pricing policies favorable for our product candidates. Failure to obtain or maintain coverage and adequate reimbursement for our product candidates, if approved, could limit our ability to market those products and decrease our ability to generate revenue.

Significant uncertainty exists as to the coverage and reimbursement status of any products for which we may obtain regulatory approval. In the United States and in other countries, patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. The availability of coverage and adequacy of reimbursement for our products by third-party payors, including government health care programs (e.g., Medicare, Medicaid, TRICARE), managed care providers, private health insurers, health maintenance organizations and other organizations is essential for most patients to be able to afford medical services and biopharmaceutical products such as our product candidates. Third-party payors decide which medications they will pay for and establish reimbursement levels.

In the United States, the principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services, or CMS, an agency within the U.S. Department of Health and Human Services, or HHS. CMS decides whether and to what extent our products will be covered and reimbursed under Medicare and private payors tend to follow CMS to a

substantial degree. Factors payors consider in determining reimbursement are based on whether the product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Our ability to successfully commercialize our product candidates will depend in part on the extent to which coverage and adequate reimbursement for our products and related treatments will be available from third-party payors. Moreover, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. If coverage and adequate reimbursement is not available, or is available only to limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

In the United States, no uniform policy for coverage and reimbursement for products exists among third-party payors. Therefore, coverage and reimbursement for our products can differ significantly from payor to payor. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the reimbursement rate that the payor will pay for the product. One payor's determination to provide coverage for a product does not assure that other payors will also provide coverage and reimbursement for the product. Third-party payors may also limit coverage to specific products on an approved list, or formulary, which might not include all of the FDA-approved products for a particular indication. We cannot be sure that coverage and reimbursement will be available for, or accurately estimate the potential revenue from, our product candidates.

A decision by a third-party payor not to cover or not to separately reimburse for our medical products or therapies using our products could reduce physician utilization of our products once approved. Assuming there is coverage for our product candidates, or therapies using our product candidates by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. We cannot be sure that coverage and reimbursement in the United States will be available for our current or future product candidates, or for any procedures using such product candidates, and any reimbursement that may become available may not be adequate or may be decreased or eliminated in the future.

Further, increasing efforts by third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our product candidates. In order to secure coverage and reimbursement for any product that might be approved for sale, we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain FDA or comparable regulatory approvals. Additionally, we may also need to provide discounts to purchasers, private health plans or government healthcare programs. Our product candidates may nonetheless not be considered medically necessary or cost-effective. If third-party payors do not consider a product to be cost-effective compared to other available therapies, they may not cover the product after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow a company to sell its products at a profit. We expect to experience pricing pressures from third-party payors in connection with the potential sale of any of our product candidates.

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenues, if any.

In some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, in the European Union, Member States can restrict the range of medicinal products for which their national health insurance systems provide reimbursement and they can control the prices of medicinal products for human use. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost effectiveness of a particular product candidate to currently available therapies. A Member State may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. Approaches between Member States are diverging. For example, in France, effective market access will be supported by agreements with hospitals and products may be reimbursed by the Social Security Fund. The price of medicines is negotiated with the Economic Committee for Health Products, or CEPS. There can be no assurance that any country that has price controls or reimbursement limitations for biopharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our product candidates. Historically, products launched in the European Union do not follow price structures of the United States and generally prices tend to be significantly lower.

Even if we obtain approval of any of our product candidates in the United States or Europe, we may never obtain approval or commercialize such products in other countries, which would limit our ability to realize their full market potential.

In order to market any products in the United States or European Union, we must establish and comply with numerous and varying regulatory requirements regarding safety and efficacy. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not mean that regulatory approval will be obtained in any other country. Approval procedures vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approvals outside of where our clinical trials currently have been conducted could result in significant delays, difficulties and costs for us and may require additional preclinical studies or clinical trials which would be costly and time consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those countries. Satisfying these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. In addition, our failure to obtain regulatory approval in any country may delay or have negative effects on the process for regulatory approval in other countries. We do not have any product candidates approved for sale in any jurisdiction, including international markets, and we do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, our ability to realize the full market potential of our products will be harmed.

We currently have no marketing and sales organization and have no experience as a company in commercializing products, and we may have to invest significant resources to develop these capabilities. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our product candidates, if approved, we may not be able to generate product revenue.

We have no internal sales, marketing or distribution capabilities, nor have we commercialized a product. If any of our product candidates ultimately receives regulatory approval, we expect to establish a marketing and sales organization with technical expertise and supporting distribution capabilities to commercialize each such product in major markets, which will be expensive and time consuming. We have no prior experience as a company in the marketing, sale and distribution of biopharmaceutical products and there are significant risks involved in building and managing a sales

organization, including our ability to hire, retain and incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of these products. We may also choose to collaborate with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. We may not be able to enter into collaborations or hire consultants or external service providers to assist us in sales, marketing and distribution functions on acceptable financial terms, or at all. In addition, our product revenues and our profitability, if any, may be lower if we rely on third parties for these functions than if we were to market, sell and distribute any products that we develop ourselves. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we are not successful in commercializing our products, either on our own or through arrangements with one or more third parties, we may not be able to generate any future product revenue and we would incur significant additional losses.

Risks Related to Ongoing Regulatory and Legal Compliance

Our relationships with healthcare providers and physicians and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Although we do not currently have any products on the market, upon commercialization of our product candidates, if approved, we will be subject to additional health care statutory and regulatory requirements and oversight by federal and state governments in the United States as well as foreign governments in the jurisdictions in which we conduct our business. Healthcare providers, physicians and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our current and future arrangements with healthcare providers, third-party payors, customers and others may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. In particular, the research of our product candidates, as well as the promotion, sales and marketing of healthcare items and services, as well as certain business arrangements in the healthcare industry, are subject to extensive laws designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, structuring and commission(s), certain customer incentive programs and other business or financial arrangements.

The applicable federal, state and foreign healthcare laws and regulations laws that may affect our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual, or the purchase, lease, order, arrangement or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. A person or entity can be found guilty of violating the statute without actual knowledge of the statute or specific intent to violate it. The term remuneration has been interpreted broadly to include anything of value. Further, courts have found that if “one purpose” of renumeration is to induce referrals, the federal Anti-Kickback statute is violated. Violations are subject to significant civil and criminal fines and penalties for each violation, plus up to three times the remuneration involved, imprisonment and exclusion from government

healthcare programs. In addition, a claim submitted for payment to any federal healthcare program that includes items or services that were made as a result of a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the FCA. The Anti-Kickback Statute has been interpreted to apply to arrangements between biopharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers, among others, on the other. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution;

- the federal civil and criminal false claims laws, including the FCA, and civil monetary penalty laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, false, fictitious or fraudulent claims for payment to, or approval by Medicare, Medicaid, or other federal healthcare programs; knowingly making, using or causing to be made or used, a false record or statement material to a false, fictitious or fraudulent claim or an obligation to pay or transmit money or property to the federal government; or knowingly concealing or knowingly and improperly avoiding, decreasing or concealing an obligation to pay money to the federal government. A claim that includes items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim under the FCA. Manufacturers can be held liable under the FCA even when they do not submit claims directly to government payors if they are deemed to "cause" the submission of false or fraudulent claims. The FCA also permits a private individual acting as a "whistleblower" to bring qui tam actions on behalf of the federal government alleging violations of the FCA and to share in any monetary recovery or settlement. When an entity is determined to have violated the FCA, the government may impose civil fines and penalties for each false claim, plus treble damages, and exclude the entity from participation in Medicare, Medicaid and other federal healthcare programs;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private), and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false fictitious or fraudulent statement or entry in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity can be found guilty of violating HIPAA fraud provisions without actual knowledge of the statute or specific intent to violate it;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose, among other things, certain requirements relating to the privacy, security and transmission of individually identifiable health information on certain covered healthcare providers, health plans and healthcare clearinghouses, known as covered entities, as well as their respective "business associates," those independent contractors or agents of covered entities that create, receive, maintain, transmit or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, there may be additional federal, state and non-U.S. laws which govern the privacy and security of health and other

personal information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts;

- the federal Physician Payments Sunshine Act, created under the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or, collectively, the ACA, and its implementing regulations, which require manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to CMS information related to direct or indirect payments and other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians and their immediate family members. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made in the previous year to certain non-physician providers such as physician assistants and nurse practitioners;
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers; and
- analogous U.S. state, local and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers, and may be broader in scope than their federal equivalents; state and foreign laws that require biopharmaceutical companies to comply with the biopharmaceutical industry's voluntary compliance guidelines and other relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers, marketing expenditures or drug pricing; state and local laws that require the registration of biopharmaceutical sales representatives; and state and foreign laws governing the privacy and security of health information, some of which may be more stringent than those in the United States (such as the European Union, which adopted the General Data Protection Regulation, which became effective in May 2018) in certain circumstances, and may differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

The distribution of biopharmaceutical products is subject to additional requirements and regulations, including extensive record-keeping, licensing, storage and security requirements intended to prevent the unauthorized sale of biopharmaceutical products.

If the FDA or a comparable foreign regulatory authority approves any of our product candidates, we will be subject to an expanded number of these laws and regulations and will need to expend resources to develop and implement policies and processes to promote ongoing compliance. The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. Ensuring business arrangements comply with applicable healthcare laws, as well as responding to possible investigations by government authorities, can be time- and resource-consuming and can divert a company's attention from the business.

It is possible that governmental and enforcement authorities will conclude that our business practices, including our arrangements with physicians and other healthcare providers, some of whom may receive stock options as compensation for services provided, may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to significant sanctions,

including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, reputational harm, exclusion from participation in federal and state funded healthcare programs, contractual damages and the curtailment or restricting of our operations, as well as additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws. Further, if any of the physicians or other healthcare providers or entities with whom we expect to do business are found to be not in compliance with applicable laws, they may be subject to similar penalties. Any action for violation of these laws, even if successfully defended, could cause us to incur significant legal expenses and divert management's attention from the operation of the business. In addition, the approval and commercialization of any product candidate we develop outside the United States will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws. All of these could harm our ability to operate our business and our financial results.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. The shifting compliance environment and the need to build and maintain robust and expandable systems to comply with multiple jurisdictions with different compliance or reporting requirements increases the possibility that a healthcare company may run afoul of one or more of the requirements.

We may be subject to, or may in the future become subject to, US federal and state, and foreign laws and regulations imposing obligations on how we collect, use, disclose, store and process personal information. Our actual or perceived failure to comply with such obligations could result in liability or reputational harm and could harm our business. Ensuring compliance with such laws could also impair our efforts to maintain and expand our customer base, and thereby decrease our revenue.

In many activities, including the conduct of clinical trials, we may be subject to laws and regulations governing data privacy and the protection of health-related and other personal information. These laws and regulations govern our processing of personal data, including the collection, access, use, analysis, modification, storage, transfer, security breach notification, destruction and disposal of personal data.

The privacy and security of personally identifiable information stored, maintained, received or transmitted, including electronically, is subject to significant regulation in the United States and abroad. While we strive to comply with all applicable privacy and security laws and regulations, legal standards for privacy continue to evolve and any failure or perceived failure to comply may result in proceedings or actions against us by government entities or others, or could cause reputational harm, which could have a material adverse effect on our business.

Numerous foreign, federal and state laws and regulations govern collection, dissemination, use and confidentiality of personally identifiable health information, including state privacy and confidentiality laws (including state laws requiring disclosure of breaches), federal and state consumer protection and employment laws; HIPAA and European and other foreign data protection laws. These laws and regulations are increasing in complexity and number, and may change frequently and sometimes conflict. The European Union's omnibus data protection law, the General Data Protection Regulation, or GDPR, took effect in May 2018. The GDPR imposes numerous requirements on entities that process personal data in the context of an establishment in the European Economic Area, or EEA, or that process the personal data of data subjects who are located in the EEA. These requirements include, for example, establishing a basis for processing, providing notice to data subjects, developing procedures to vindicate expanded data subject rights, implementing appropriate technical and organizational measures to safeguard personal data and complying with restrictions on the cross-border transfer of personal data from the EEA to countries that the European Union does not consider

to have in place adequate data protection legislation, such as the United States. The GDPR additionally establishes heightened obligations for entities that process "special categories" of personal data, such as health data. Nearly all clinical trials involve the processing of these "special categories" of personal data, and thus processing of personal data collected during the course of clinical trials is subject to heightened protections under the GDPR. Violations of the GDPR can lead to penalties of up to $20 million or 4% of an entity's annual turnover.

As a means to transfer personal data from the EEA to the U.S., U.S.-based companies may certify compliance with the privacy principles of the EU-U.S. Privacy Shield, or the Privacy Shield. Certification to the Privacy Shield, however, is not mandatory. If a U.S.-based company does not certify compliance with the Privacy Shield, it may rely on other authorized mechanisms to transfer personal data. Notably, the Privacy Shield is currently subject to challenge in the EU courts, and it is possible that it will be invalidated, which was the fate of its predecessor, the EU-U.S. Safe Harbor. In the event of invalidation of the Privacy Shield, U.S. companies that currently rely on the Privacy Shield as the basis for cross-border transfer of personal data will need to establish another basis for cross-border transfer of personal data.

HIPAA establishes a set of national privacy and security standards for the protection of individually identifiable health information, including protected health information, or PHI, by health plans, certain health care clearinghouses and health care providers that submit certain covered transactions electronically, or covered entities, and their "business associates," which are persons or entities that perform certain services for, or on behalf of, a covered entity that involve creating, receiving, maintaining or transmitting PHI. While we are not currently a covered entity or business associate under HIPAA, we may receive identifiable information from these entities. Failure to receive this information properly could subject us to HIPAA's criminal penalties, which may include fines up to $250,000 per violation and/or imprisonment. In addition, responding to government investigations regarding alleged violations of these and other laws and regulations, even if ultimately concluded with no findings of violations or no penalties imposed, can consume company resources and impact our business and, if public, harm our reputation.

In addition, various states, such as California and Massachusetts, have implemented similar privacy laws and regulations, such as the California Confidentiality of Medical Information Act, that impose restrictive requirements regulating the use and disclosure of health information and other personally identifiable information. In addition to fines and penalties imposed upon violators, some of these state laws also afford private rights of action to individuals who believe their personal information has been misused. California's patient privacy laws, for example, provide for penalties of up to $250,000 and permit injured parties to sue for damages. In addition to the California Confidentiality of Medical Information Act, California also recently enacted the California Consumer Privacy Act of 2018, or CCPA, which was effective January 1, 2020. The CCPA has been characterized as the first "GDPR-like" privacy statute to be enacted in the United States because it mirrors a number of the key provisions of the EU General Data Protection Regulation. The CCPA establishes a new privacy framework for covered businesses in the State of California, by creating an expanded definition of personal information, establishing new data privacy rights for consumers imposing special rules on the collection of consumer data from minors and creating a new and potentially severe statutory damages framework for violations of the CCPA and for businesses that fail to implement reasonable security procedures and practices to prevent data breaches.

The interplay of federal and state laws may be subject to varying interpretations by courts and government agencies, creating complex compliance issues for us and potentially exposing us to additional expense, adverse publicity and liability. Further, as regulatory focus on privacy issues continues to increase and laws and regulations concerning the protection of personal information expand and become more complex, these potential risks to our business could intensify. The

legislative and regulatory landscape for privacy and data security continues to evolve, and there has been an increasing focus on privacy and data security issues which may affect our business. Failure to comply with current and future laws and regulations could result in government enforcement actions (including the imposition of significant penalties), criminal and/or civil liability for us and our officers and directors, private litigation and/or adverse publicity that negatively affects our business.

Ongoing healthcare legislative and regulatory reform measures may have a material adverse effect on our business and results of operations.

Changes in U.S. and foreign regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling; (iii) the recall or discontinuation of our products; or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business.

In the U.S. and in some foreign jurisdictions, there have been, and likely will continue to be, a number of legislative initiatives and regulatory changes regarding the healthcare system directed at broadening the availability of healthcare, improving the quality of healthcare, and containing or lowering the cost of healthcare. For example, in March 2010, the ACA was enacted, which substantially changed the way health care is financed by both governmental and private insurers, and significantly impacted the U.S. biopharmaceutical industry. The ACA, among other things, subjects biological products to potential competition by lower-cost biosimilars, expands the types of entities eligible for the 340B drug discount program; introduced a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected; increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations; established annual fees and taxes on manufacturers of certain branded prescription drugs; and created a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (increased to 70% pursuant to the Bipartisan Budget Act of 2018, or BBA, effective as of January 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D.

Since its enactment, there have been numerous judicial, administrative, executive and legislative challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. Various portions of the ACA are currently undergoing legal and constitutional challenges in the United States Supreme Court; the Trump Administration has issued various Executive Orders which eliminated cost sharing subsidies and various provisions that would impose a fiscal burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers or manufacturers of pharmaceuticals or medical devices; and Congress has introduced several pieces of legislation aimed at significantly revising or repealing the ACA. Also, in December 2018, CMS issued a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program. Since then, the ACA risk adjustment program payment parameters have been updated annually. It is unclear whether the ACA will be overturned, repealed, replaced or further amended. We cannot predict what affect further changes to the ACA would have on our business.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. For example, on August 2, 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs, including aggregate reductions of Medicare payments to

providers of up to 2% per fiscal year. These reductions went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, unless additional Congressional action is taken. However, pursuant to the Coronavirus Aid, Relief and Economic Security Act, or CARES Act, these Medicare sequester reductions will be suspended from May 1, 2020 through December 31, 2020 due to the COVID-19 pandemic. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Additionally, the BBA, among other things, amended the ACA, effective January 1, 2019, by increasing the point-of-sale discount (from 50% under the ACA to 70%) that is owed by pharmaceutical manufacturers who participate in Medicare Part D and closing the coverage gap in most Medicare drug plans, commonly referred to as the “donut hole”.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, CMS may develop new payment and delivery models, such as bundled payment models. Recently, there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their products. Such scrutiny has resulted in several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. For example, on March 10, 2020, the Trump administration sent “principles” for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and place limits on pharmaceutical price increases. Additionally, the Trump administration previously released a “Blueprint” to lower drug prices and reduce out of pocket costs of drugs that contained proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. HHS has solicited feedback on some of these measures and has implemented others under its existing authority. For example, in May 2019, CMS issued a final rule that would allow Medicare Advantage Plans the option of using step therapy, a type of prior authorization, for Part B drugs beginning January 1, 2020. This final rule codified CMS’s policy change that was effective January 1, 2019. Although a number of these and other measures may require additional authorization to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs.

At the state level in the United States, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biologic product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. Legally mandated price controls on payment amounts by third-party payors or other restrictions on coverage or access could harm our business, results of operations, financial condition and prospects. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. This could reduce the ultimate demand for our product candidates that we successfully commercialize or put pressure on our product pricing.

We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action in the United States or in any other jurisdictions. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the

adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that may have been obtained and we may not achieve or sustain profitability.

In the United States, inadequate funding for the FDA, the Securities and Exchange Commission, or the SEC, and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the SEC and other government agencies on which our operations may rely, including those that fund research and development activities, is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical employees and stop critical activities. Separately, in response to the COVID-19 pandemic, on March 10, 2020, the FDA announced its intention to temporarily postpone most inspections of foreign manufacturing facilities and along with routine surveillance inspections of domestic manufacturing facilities. On July 10, 2020, the FDA announced its goal of restarting domestic onsite inspections during the week of July 20 but such activities will depend on data about the virus' trajectory in a given state and locality and the rules and guidelines that are put in place by state and local governments. The FDA has developed a rating system to assist in determining when and where it is safest to conduct prioritized domestic inspections. In April 2020, the FDA stated that its New Drug Program was continuing to meet program user fee performance goals, but due to many agency staff working on COVID-19 activities, it was possible that the FDA would not be able to sustain that level of performance indefinitely. Regulatory authorities outside the United States may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic and may experience delays in their regulatory activities. If a prolonged government shutdown occurs, or if global health concerns continue to prevent the FDA or other regulatory authorities from conducting their regular inspections, reviews or other regulatory activities, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, upon completion of this offering and in our operations as a public company, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

EU drug marketing and reimbursement regulations may materially affect our ability to market and receive coverage for our products in the European member states.

We ultimately intend to seek approval to market our product candidates in both the United States and in selected foreign jurisdictions. If we obtain approval in one or more foreign jurisdictions for our product candidates, we will be subject to rules and regulations in those jurisdictions. In some foreign countries, particularly those in the EU, the pricing of drugs is subject to governmental control and other market regulations which could put pressure on the pricing and usage of our product candidates. In these countries, pricing negotiations with governmental authorities can take considerable time after obtaining marketing approval of a product candidate. In addition, market acceptance and sales of our product candidates will depend significantly on the availability of adequate coverage and

reimbursement from third-party payors for our product candidates and may be affected by existing and future health care reform measures.

Much like the federal Anti-Kickback Statute prohibition in the United States, the provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is also prohibited in the EU. The provision of benefits or advantages to physicians is governed by the national anti-bribery laws of EU Member States, and in respect of the U.K. (which is longer a member of the EU), the U.K. Bribery Act of 2010. Infringement of these laws could result in substantial fines and imprisonment.

Payments made to physicians in certain EU Member States must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization and/or the regulatory authorities of the individual EU Member States. These requirements are provided in the national laws, industry codes or professional codes of conduct, applicable in the EU Member States. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or imprisonment.

In addition, in most foreign countries, including the EEA, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing and reimbursement vary widely from country to country. For example, the EU provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. Reference pricing used by various EU member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. In some countries, we may be required to conduct a clinical study or other studies that compare the cost-effectiveness of any of our product candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. There can be no assurance that any country that has price controls or reimbursement limitations for biopharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products. Historically, products launched in the EU do not follow price structures of the United States and generally prices tend to be significantly lower. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If pricing is set at unsatisfactory levels or if reimbursement of our products is unavailable or limited in scope or amount, our revenues from sales and the potential profitability of any of our product candidates in those countries would be negatively affected.

Legal, political and economic uncertainty surrounding the exit of the U.K. from the EU may be a source of instability in international markets, create significant currency fluctuations, adversely affect our operations in the U.K. and pose additional risks to our business, revenue, financial condition and results of operations.

On June 23, 2016, the U.K. held a referendum in which a majority of the eligible members of the electorate voted to leave the EU, commonly referred to as Brexit. Pursuant to Article 50 of the Treaty on EU, the U.K. ceased being a Member State of the EU on January 31, 2020. However, the terms of the withdrawal have yet to be fully negotiated. The implementation period began February 1, 2020 and will continue until December 31, 2020. During this 11-month period, the U.K. will continue to follow all of the EU's rules, the EU's pharmaceutical law remains applicable to the U.K. and the U.K.'s trading relationship will remain the same. However, regulations (including financial laws and regulations, tax and free trade agreements, intellectual property rights, data protection laws, supply chain logistics, environmental, health and safety laws and regulations, medicine licensing and regulations, immigration laws and employment laws), have yet to be addressed. This lack of clarity on future U.K. laws and

regulations and their interaction with the EU laws and regulations may negatively impact foreign direct investment in the U.K., increase costs, depress economic activity and restrict access to capital.

The uncertainty concerning the U.K.'s legal, political and economic relationship with the EU after Brexit may be a source of instability in the international markets, create significant currency fluctuations and/or otherwise adversely affect trading agreements or similar cross-border co-operation arrangements (whether economic, tax, fiscal, legal, regulatory or otherwise) beyond the date of Brexit.

These developments, or the perception that any of them could occur, may have a significant adverse effect on global economic conditions and the stability of global financial markets, and could significantly reduce global market liquidity and limit the ability of key market participants to operate in certain financial markets. In particular, it could also lead to a period of considerable uncertainty in relation to the U.K. financial and banking markets, as well as on the regulatory process in Europe. Asset valuations, currency exchange rates and credit ratings may also be subject to increased market volatility.

If the U.K. and the EU are unable to negotiate acceptable agreements or if other EU member states pursue withdrawal, barrier-free access between the U.K. and other EU member states or among the European Economic Area overall could be diminished or eliminated. The long-term effects of Brexit will depend on any agreements (or lack thereof) between the U.K. and the EU and, in particular, any arrangements for the U.K. to retain access to EU markets either during a transitional period from January 1, 2021 or more permanently.

Such a withdrawal from the EU is unprecedented, and it is unclear how the U.K.'s access to the European single market for goods, capital, services and labor within the EU, or single market, and the wider commercial, legal and regulatory environment, will impact our current and future operations (including business activities conducted by third parties and contract manufacturers on our behalf) and clinical activities in the U.K. In addition to the foregoing, our U.K. operations support our current and future operations and clinical activities in the EU and European Economic Area, or EEA, and these operations and clinical activities could be disrupted by Brexit.

We may also face new regulatory costs and challenges that could have an adverse effect on our operations. Depending on the terms of the U.K.'s withdrawal from the EU, the U.K. could lose the benefits of global trade agreements negotiated by the EU on behalf of its members, which may result in increased trade barriers that could make our doing business in the EU and the EEA more difficult. Since the regulatory framework in the U.K. covering quality, safety and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales and distribution of pharmaceutical products is derived from EU directives and regulations, Brexit could materially impact the future regulatory regime with respect to the approval of our product candidates in the U.K. For instance, in November 2017, EU member states voted to move the EMA, the EU's regulatory body, from London to Amsterdam. Operations in Amsterdam commenced in March 2019, and the move itself may cause significant disruption to the regulatory approval process in Europe. It remains to be seen how, if at all, Brexit will impact regulatory requirements for product candidates and products in the U.K. Any delay in obtaining, or an inability to obtain, any regulatory approvals, as a result of Brexit or otherwise, would prevent us from commercializing our product candidates in the U.K. and/or the EU and restrict our ability to generate revenue and achieve and sustain profitability. If any of these outcomes occur, we may be forced to restrict or delay efforts to seek regulatory approval in the U.K. and/or EU for our product candidates, which could significantly and materially harm our business. Even prior to any change to the U.K.'s relationship with the EU, the announcement of Brexit has created economic uncertainty surrounding the terms of Brexit and its consequences could adversely impact customer confidence resulting in customers reducing their spending budgets on our product candidates, if approved, which could adversely affect our business, financial condition, results of operations and could adversely affect the market price of our common stock.

Additional laws and regulations governing international operations could negatively impact or restrict our operations.

For our operations outside of the United States, we must dedicate additional resources to comply with numerous laws and regulations in each jurisdiction in which we plan to operate. The U.S. Foreign Corrupt Practices Act, or the FCPA, prohibits any U.S. individual or business entity from paying, offering, authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Compliance with the FCPA is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the biopharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered foreign officials. Certain payments to hospitals and healthcare providers in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions. Recently the SEC and Department of Justice have increased their FCPA enforcement activities with respect to biotechnology and pharmaceutical companies. There is no certainty that all of our employees, agents or contractors, or those of our affiliates, will comply with all applicable laws and regulations, particularly given the high level of complexity of these laws.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information products classified for national security purposes, as well as certain products, technology and technical data relating to those products. If we continue and expand our presence outside of the United States, it will require us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain products and product candidates outside of the United States, which could limit our growth potential and increase our development costs.

Violations of these laws and regulations could result in fines, criminal sanctions against us, our officers or our employees, the closing down of our facilities, requirements to obtain export licenses, cessation of business activities in sanctioned countries, implementation of compliance programs and prohibitions on the conduct of our business. Any such violations could include prohibitions on our ability to offer our products, if approved, in one or more countries and could materially damage our reputation, our brand, our international expansion efforts, our ability to attract and retain employees and our business, prospects, operating results and financial condition. The SEC also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous and flammable materials, including chemicals and biological materials, and may also produce hazardous waste products. Even if we contract with third parties for the disposal of these materials and waste products, we cannot completely eliminate the risk of contamination or injury resulting from these materials. In the event of contamination or injury resulting from the use or disposal of our hazardous materials, we could be held liable for any resulting damages, and any liability could

exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

We maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees, but this insurance may not provide adequate coverage against potential liabilities. However, we do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. Environmental laws and regulations may impair our research, development or production efforts. In addition, failure to comply with these laws and regulations may result in substantial fines, penalties or other sanctions.

Risks Related to Our Intellectual Property

Our success depends in part on our ability to protect our intellectual property. It is difficult and costly to protect our proprietary rights and technology, and we may not be able to ensure their protection.

Our business will depend in large part on obtaining and maintaining patent, trademark and trade secret protection of our proprietary technologies and our product candidates, their respective components, synthetic intermediates, formulations, combination therapies and methods used to manufacture them and methods of treatment, as well as successfully defending these patents against third-party challenges. Our ability to stop unauthorized third parties from making, using, selling, offering to sell or importing our product candidates is dependent upon the extent to which we have rights under valid and enforceable patents that cover these activities and whether a court would issue an injunctive remedy. If we are unable to secure and maintain patent protection for any product or technology we develop, or if the scope of the patent protection secured is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to commercialize any product candidates we may develop may be adversely affected.

The patenting process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. In addition, we may not pursue, obtain, or maintain patent protection in all relevant markets. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from or license to third parties and are reliant on our licensors or licensees.

The strength of patents in the biotechnology and biopharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries. Even if the patents do successfully issue, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held unenforceable. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our technology, including our product candidates, or prevent others from designing around our claims. If the breadth or strength of protection provided by the patent applications we hold with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our ability to commercialize, our product candidates. Further, if we encounter delays in our clinical trials, the period of time during which we could market our product candidates under patent protection would be reduced.

We cannot be certain that we were the first to file any patent application related to our technology, including our product candidates, and, if we were not, we may be precluded from obtaining patent protection for our technology, including our product candidates.

We cannot be certain that we are the first to invent the inventions covered by pending patent applications and, if we are not, we may be subject to priority disputes. Furthermore, for United States applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third-party or instituted by the United States Patent and Trademark Office, or USPTO, to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. Similarly, for United States applications in which at least one claim is not entitled to a priority date before March 16, 2013, derivation proceedings can be instituted to determine whether the subject matter of a patent claim was derived from a prior inventor's disclosure.

We may be required to disclaim part or all of the term of certain patents or all of the term of certain patent applications. There may be prior art of which we are not aware that may affect the validity or enforceability of a patent or patent application claim. There also may be prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. No assurance can be given that if challenged, our patents would be declared by a court to be valid or enforceable or that even if found valid and enforceable, would adequately protect our product candidates, or would be found by a court to be infringed by a competitor's technology or product. We may analyze patents or patent applications of our competitors that we believe are relevant to our activities, and consider that we are free to operate in relation to our product candidates, but our competitors may achieve issued claims, including in patents we consider to be unrelated, which block our efforts or may potentially result in our product candidates or our activities infringing such claims. The possibility exists that others will develop products which have the same effect as our products on an independent basis which do not infringe our patents or other intellectual property rights, or will design around the claims of patents that may issue that cover our products.

Recent or future patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. Under the enacted Leahy-Smith America Invents Act, or America Invents Act, enacted in 2013, the United States moved from a "first to invent" to a "first-to-file" system. Under a "first-to-file" system, assuming the other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to a patent on the invention regardless of whether another inventor had made the invention earlier. The America Invents Act includes a number of other significant changes to U.S. patent law, including provisions that affect the way patent applications are prosecuted, redefine prior art and establish a new post-grant review system. The effects of these changes are currently unclear as the USPTO only recently developed new regulations and procedures in connection with the America Invents Act and many of the substantive changes to patent law, including the "first-to-file" provisions, only became effective in March 2013. In addition, the courts have yet to address many of these provisions and the applicability of the act and new regulations on specific patents discussed herein have not been determined and would need to be reviewed. However, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to make or use compounds that are similar to the compositions of our product candidates but that are not covered by the claims of our patents or those of our licensors;
- we or our licensors, as the case may be, may fail to meet our obligations to the U.S. government in regards to any in-licensed patents and patent applications funded by U.S. government grants, leading to the loss of patent rights;
- we or our licensors, as the case may be, might not have been the first to file patent applications for these inventions;
- others may independently develop similar or alternative technologies;
- it is possible that our pending patent applications will not result in issued patents;
- it is possible that there are prior public disclosures that could invalidate our or our licensors' patents, as the case may be, or parts of our or their patents;
- it is possible that others may circumvent our owned or in-licensed patents;
- it is possible that there are unpublished applications or patent applications maintained in secrecy that may later issue with claims covering our products or technology similar to ours;
- the laws of foreign countries may not protect our or our licensors', as the case may be, proprietary rights to the same extent as the laws of the United States;
- the claims of our owned or in-licensed issued patents or patent applications, if and when issued, may not cover our product candidates;
- our owned or in-licensed issued patents may not provide us with any competitive advantages, may be narrowed in scope, or be held invalid or unenforceable as a result of legal challenges by third parties;
- the inventors of our owned or in-licensed patents or patent applications may become involved with competitors, develop products or processes which design around our patents or become hostile to us or the patents or patent applications on which they are named as inventors;
- it is possible that our owned or in-licensed patents or patent applications omit individual(s) that should be listed as inventor(s) or include individual(s) that should not be listed as inventor(s), which may cause these patents or patents issuing from these patent applications to be held invalid or unenforceable;
- we have engaged in scientific collaborations in the past, and will continue to do so in the future. Such collaborators may develop adjacent or competing products to ours that are outside the scope of our patents;
- we may not develop additional proprietary technologies for which we can obtain patent protection;
- it is possible that product candidates or diagnostic tests we develop may be covered by third parties' patents or other exclusive rights; or
- the patents of others may have an adverse effect on our business.

We have entered into, and may enter into, license or other collaboration agreements that impose certain obligations on us. If we fail to comply with our obligations under such agreements with third parties, we could lose license rights that may be important to our business.

In connection with our efforts to expand our pipeline of product candidates, we may enter into certain licenses or other collaboration agreements in the future pertaining to the in-license of rights to

additional candidates. Such agreements may impose various diligence, milestone payment, royalty, insurance or other obligations on us. If we fail to comply with these obligations, our licensor or collaboration partners may have the right to terminate the relevant agreement, in which event we would not be able to develop or market the products covered by such licensed intellectual property.

Moreover, disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our product candidates, technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

In addition, the agreements under which we currently license intellectual property or technology from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates, which could have a material adverse effect on our business, financial conditions, results of operations and prospects.

In addition, we may have limited control over the maintenance and prosecution of these in-licensed patents and patent applications, or any other intellectual property that may be related to our in-licensed intellectual property. For example, we cannot be certain that such activities by any future licensors have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents and other intellectual property rights. We have limited control over the manner in which our licensors initiate an infringement proceeding against a third-party infringer of the intellectual property rights, or defend certain of the intellectual property that is licensed to us. It is possible that the licensors' infringement proceeding or defense activities may be less vigorous than had we conducted them ourselves.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to patent protection, we rely heavily upon know-how and trade secret protection, as well as non-disclosure agreements and invention assignment agreements with our employees, consultants and third parties, to protect our confidential and proprietary information, especially where we do not believe patent protection is appropriate or obtainable. In addition to contractual measures, we try to protect the confidential nature of our proprietary information using physical and technological security measures. Such measures may not, for example, in the case of misappropriation of a trade secret by an employee or third-party with authorized access, provide adequate protection for our proprietary

information. Our security measures may not prevent an employee or consultant from misappropriating our trade secrets and providing them to a competitor, and recourse we take against such misconduct may not provide an adequate remedy to protect our interests fully. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret can be difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, trade secrets may be independently developed by others in a manner that could prevent legal recourse by us. If any of our confidential or proprietary information, such as our trade secrets, were to be disclosed or misappropriated, or if any such information was independently developed by a competitor, our competitive position could be harmed.

In addition, courts outside the United States are sometimes less willing to protect trade secrets. If we choose to go to court to stop a third-party from using any of our trade secrets, we may incur substantial costs. These lawsuits may consume our time and other resources even if we are successful. Although we take steps to protect our proprietary information and trade secrets, including through contractual means with our employees and consultants, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology.

Thus, we may not be able to meaningfully protect our trade secrets. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual or entity during the course of the party's relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. In the case of employees, the agreements provide that all inventions conceived by the individual, and which are related to our current or planned business or research and development or made during normal working hours, on our premises or using our equipment or proprietary information, are our exclusive property. In addition, we take other appropriate precautions, such as physical and technological security measures, to guard against misappropriation of our proprietary technology by third parties. We have also adopted policies and conduct training that provides guidance on our expectations, and our advice for best practices, in protecting our trade secrets.

Third-party claims of intellectual property infringement may prevent or delay our product discovery and development efforts.

Our commercial success depends in part on our ability to develop, manufacture, market and sell our product candidates and use our proprietary technologies without infringing the proprietary rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and biopharmaceutical industries, as well as administrative proceedings for challenging patents, including interference, derivation, *inter partes* review, post grant review, and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. We may be exposed to, or threatened with, future litigation by third parties having patent or other intellectual property rights alleging that our product candidates and/or proprietary technologies infringe their intellectual property rights. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing our product candidates. As the biotechnology and biopharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others. Moreover, it is not always clear to industry participants, including us, which patents cover various types of drugs, products or their methods of use or manufacture. Thus, because of the large number of patents issued and patent applications filed in our fields, there may be a risk that third parties may allege they have patent rights encompassing our product candidates, technologies or methods.

If a third-party claims that we infringe its intellectual property rights, we may face a number of issues, including, but not limited to:

- infringement and other intellectual property claims which, regardless of merit, may be expensive and time-consuming to litigate and may divert our management's attention from our core business;
- substantial damages for infringement, which we may have to pay if a court decides that the product candidate or technology at issue infringes on or violates the third-party's rights, and, if the court finds that the infringement was willful, we could be ordered to pay treble damages and the patent owner's attorneys' fees;
- a court prohibiting us from developing, manufacturing, marketing or selling our product candidates, or from using our proprietary technologies, unless the third-party licenses its product rights to us, which it is not required to do;
- if a license is available from a third-party, we may have to pay substantial royalties, upfront fees and other amounts, and/or grant cross-licenses to intellectual property rights for our products and any license that is available may be non-exclusive, which could result in our competitors gaining access to the same intellectual property; and
- redesigning our product candidates or processes so they do not infringe, which may not be possible or may require substantial monetary expenditures and time.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, results of operations, financial condition and prospects. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a risk that some of our confidential information could be compromised by disclosure.

Our collaborators may assert ownership or commercial rights to inventions they develop from research we support or that we develop or otherwise arising from the collaboration.

We collaborate with several institutions, universities, medical centers, physicians and researchers in scientific matters and expect to continue to enter into additional collaboration agreements. In certain cases, we do not have written agreements with these collaborators, or the written agreements we have do not cover intellectual property rights. Also, we rely on numerous third parties to provide us with materials that we use to conduct our research activities and develop our product candidates. If we cannot successfully negotiate sufficient ownership and commercial rights to any inventions that result from our use of a third-party collaborator's materials, or if disputes arise with respect to the intellectual property developed with the use of a collaborator's samples, or data developed in a collaborator's study, we may be limited in our ability to capitalize on the market potential of these inventions or developments.

Third parties may assert that we are employing their proprietary technology without authorization.

There may be third-party patents of which we are currently unaware with claims to compositions of matter, materials, formulations, methods of manufacture or methods for treatment that encompass the composition, use or manufacture of our product candidates. There may be currently pending patent applications of which we are currently unaware which may later result in issued patents that our product candidates or their use or manufacture may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patent were held by a court of competent jurisdiction to cover our product candidates,

intermediates used in the manufacture of our product candidates or our materials generally, aspects of our formulations or methods of use, the holders of any such patent may be able to block our ability to develop and commercialize the product candidate unless we obtained a license or until such patent expires or is finally determined to be held invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business. Even if we obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

Parties making claims against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible, or require substantial time and monetary expenditure. We cannot predict whether any such license would be available at all or whether it would be available on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize our product candidates, which could harm our business significantly.

Third parties may assert that our employees or consultants have wrongfully used or disclosed confidential information or misappropriated trade secrets.

As is common in the biotechnology and biopharmaceutical industries, we employ individuals who were previously employed at universities or other biotechnology or biopharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees and consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of a former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and, if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. This type of litigation or proceeding could substantially increase our operating losses and reduce our resources available for development activities. We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their substantially greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other intellectual property related proceedings could adversely affect our ability to compete in the marketplace.

We may not be successful in obtaining or maintaining necessary rights to develop any future product candidates on acceptable terms.

Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business may depend in part on our ability to acquire, in-license or use these proprietary rights.

Our product candidates may also require specific formulations to work effectively and efficiently and these rights may be held by others. We may develop products containing our compounds and pre-existing biopharmaceutical compounds. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify as necessary or important to our business operations. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all, which would harm our business. We may need to cease use of the compositions or methods covered by such third-party intellectual property rights, and may need to seek to develop alternative approaches that do not infringe on such intellectual property rights which may entail additional costs and development delays, even if we were able to develop such alternatives, which may not be feasible. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology.

Additionally, we sometimes collaborate with academic institutions to accelerate our preclinical research or development under written agreements with these institutions. In certain cases, these institutions may provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such option, we may be unable to negotiate a license within the specified timeframe or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to others, potentially blocking our ability to pursue our program. If we are unable to successfully obtain rights to required third-party intellectual property or to maintain the existing intellectual property rights we have, we may have to abandon development of such program and our business and financial condition could suffer.

The licensing and acquisition of third-party intellectual property rights is a competitive area, and companies, which may be more established, or have greater resources than we do, may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to commercialize our product candidates. More established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities. There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to acquire.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our patents or the patents of our current or future licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that one or more of our patents is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question or for other reasons. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated, held unenforceable or interpreted narrowly, and could put our patent applications at risk of not issuing. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business.

We may choose to challenge the patentability of claims in a third-party's U.S. patent by requesting that the USPTO review the patent claims in an *ex-parte* re-examination, *inter partes* review or post-grant review proceedings. These proceedings are expensive and may consume our time or other resources. We may choose to challenge a third-party's patent in patent opposition proceedings in the European Patent Office, or EPO, or other foreign patent office. The costs of these opposition proceedings could be substantial, and may consume our time or other resources. If we fail to obtain a favorable result at the USPTO, EPO or other patent office then we may be exposed to litigation by a third-party alleging that the patent may be infringed by our product candidates or proprietary technologies.

In addition, because some patent applications in the United States may be maintained in secrecy until the patents are issued, patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, and publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications for technology covered by our owned and in-licensed issued patents or our pending applications, or that we or, if applicable, a licensor were the first to invent the technology. Our competitors may have filed, and may in the future file, patent applications covering our products or technology similar to ours. Any such patent application may have priority over our owned and in-licensed patent applications or patents, which could require us to obtain rights to issued patents covering such technologies. If another party has filed a U.S. patent application on inventions similar to those owned by or in-licensed to us, we or, in the case of in-licensed technology, the licensor may have to participate in an interference or derivation proceeding declared by the USPTO to determine priority of invention in the United States. If we or one of our licensors is a party to an interference or derivation proceeding involving a U.S. patent application on inventions owned by or in-licensed to us, we may incur substantial costs, divert management's time and expend other resources, even if we are successful.

Interference or derivation proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and our competitors gain access to the same technology. Litigation or interference proceedings may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, alone or with our licensors, misappropriation of our trade secrets or confidential information, particularly in countries where the laws may not protect those rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee

payment and other provisions during the patent application process and following the issuance of a patent. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In certain circumstances, even inadvertent noncompliance events may permanently and irrevocably jeopardize patent rights. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

Any patents, if issued, covering our product candidates could be found invalid or unenforceable if challenged in court or the USPTO.

If we or one of our licensors initiate legal proceedings against a third-party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate, as applicable, is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third-party can assert invalidity or unenforceability of a patent. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, inter partes review, post grant review, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we, our patent counsel and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, or if we are otherwise unable to adequately protect our rights, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection could have a material adverse impact on our business and our ability to commercialize or license our technology and product candidates.

Likewise, our current licensed or owned patents are expected to expire between 2029 and 2041, without taking into account any possible patent term adjustments or extensions. Our earliest patents may expire before, or soon after, our first product achieves marketing approval in the United States or foreign jurisdictions. Upon the expiration of our current patents, we may lose the right to exclude others from practicing these inventions. The expiration of these patents could also have a similar material adverse effect on our business, results of operations, financial condition and prospects. Our current licensed or owned pending patent applications covering our proprietary technologies or our product candidates that if issued as patents are expected to expire from 2029 through 2041, without taking into account any possible patent term adjustments or extensions. However, we cannot be assured that the USPTO or relevant foreign patent offices will grant any of these patent applications.

Changes in patent law in the United States and in foreign jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our products.

Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. Assuming that other requirements for patentability are met, prior to March 16, 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. On March 16, 2013, under the America Invents Act, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file

a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. A third party that files a patent application in the USPTO on or after March 16, 2013, but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we or our licensors were the first to either (i) file any patent application related to our product candidates or (ii) invent any of the inventions claimed in our or our licensor's patents or patent applications.

The America Invents Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also may affect patent litigation. These include allowing third party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, inter-parties review and derivation proceedings. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. Therefore, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our owned or in-licensed patent applications and the enforcement or defense of our owned or in-licensed issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, the patent positions of companies in the development and commercialization of biopharmaceuticals are particularly uncertain. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. This combination of events has created uncertainty with respect to the validity and enforceability of patents, once obtained. Depending on future actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could have a material adverse effect on our existing patent portfolio and our ability to protect and enforce our intellectual property in the future.

We have limited foreign intellectual property rights and may not be able to protect our intellectual property rights throughout the world.

We have limited intellectual property rights outside the United States. Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection but where enforcement is not as strong as that in the United States. These products may compete with our products in jurisdictions where we do not have any issued patents and our patent claims or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of, and may require a compulsory license to, patents, trade secrets and other intellectual property protection, particularly those relating to biopharmaceutical products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products against third parties in violation of our proprietary rights generally. The initiation of proceedings by third parties to challenge the scope or validity of our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions such as patent term adjustments and/or extensions, may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

If we do not obtain patent term extension and data exclusivity for any product candidates we may develop, our business may be materially harmed.

Depending upon the timing, duration and specifics of any FDA marketing approval of any product candidates we may develop, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Action of 1984, or the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent extension term of up to five years as compensation for patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our business, financial condition, results of operations and prospects could be materially harmed.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these

trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected.

Risks Related to Our Dependence on Third Parties

We rely on third parties to assist in conducting our preclinical studies and clinical trials. If they do not perform satisfactorily, we may not be able to obtain regulatory approval or commercialize our product candidates, or such approval or commercialization may be delayed, and our business could be substantially harmed.

We have relied upon and plan to continue to rely on third parties, such as laboratories, CROs, clinical data management organizations, medical institutions and clinical investigators, to conduct our preclinical studies and clinical trials and expect to rely on these third parties to conduct preclinical studies and clinical trials of any other product candidate that we develop. Any of these third parties may terminate their engagements with us under certain circumstances. We may not be able to enter into alternative arrangements or do so on commercially reasonable terms. In addition, there is a natural transition period when a new CRO begins work. As a result, delays may occur, which could negatively impact our ability to meet our expected clinical development timelines and harm our business, financial condition and prospects.

Although our reliance on these third parties for preclinical and clinical development activities limits our control over these activities, we remain responsible for ensuring that each of our preclinical studies and clinical trials is conducted in accordance with the applicable protocol, legal and regulatory requirements and scientific standards. Moreover, human clinical research must comply with GCPs for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators, clinical trial sites and IRBs. If we or our third-party contractors fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the regulatory authorities may require us to perform additional clinical trials before approving our product candidates, which would delay the regulatory approval process. We cannot be certain that, upon inspection, a regulatory authority will determine that any of our clinical trials comply with GCPs.

The third parties conducting clinical trials on our behalf are not our employees, and except for remedies available to us under our agreements with such contractors, we cannot control whether or not they devote sufficient time, skill and resources to our ongoing development programs. These outside contractors may not assign as great a priority to our programs or pursue them as diligently as we would if we were undertaking such programs ourselves. These contractors may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug development activities, which could impede their ability to devote appropriate time to our clinical programs. If these third parties, including clinical investigators, do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we may not be able to obtain, or may be delayed in obtaining, regulatory approvals for our product candidates. If that occurs, we will not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates. In such an event, our financial results and the commercial prospects for any product candidates that we seek to develop could be harmed, our costs could increase and our ability to generate revenues could be delayed, impaired or foreclosed.

If our relationships with any third parties conducting our studies are terminated, we may be unable to enter into arrangements with alternative third parties on commercially reasonable terms, or at all.

Switching or adding third parties to conduct our studies involves substantial cost and requires extensive management time and focus. In addition, there is a natural transition period when a new third party commences work. As a result, delays occur, which can materially impact our ability to meet our desired preclinical and clinical development timelines. Although we carefully manage our relationships with third parties conducting our studies, we cannot assure that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material and adverse effect on our business, financial condition and results of operations.

We also rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or regulatory approval of our product candidates or commercialization of any resulting products, producing additional losses and depriving us of potential product revenue.

Furthermore, we may also engage third parties to develop companion or complementary diagnostics for use in our clinical trials, as applicable, but such third parties may not be successful in developing such companion or complementary diagnostics, furthering the difficulty in identifying patients with the targeted eligibility criteria for our clinical trials. If we are required to develop companion or complementary diagnostics and are unable to do so or unable to obtain any required regulatory clearance or approval of those diagnostics, this could compromise our ability to seek participation in the U.S. in certain of the FDA's expedited review and development programs, including those that may accelerate clinical development and regulatory timelines, and could limit our ability to seek regulatory approval for our product candidates.

The manufacture of our product candidates is complex, and we may encounter difficulties in production. We currently rely completely on third parties to formulate and manufacture our preclinical, clinical trial and commercial drug supplies. The development and commercialization of any of our product candidates could be stopped, delayed or made less profitable if those third parties fail to provide us with sufficient quantities of such drug supplies or fail to do so at acceptable quality levels, including in accordance with rigorously enforced regulatory requirements or contractual obligations, and our operations could be harmed as a result.

The processes involved in manufacturing our drug product candidates are complex, expensive, highly-regulated and subject to multiple risks. Further, as product candidates are developed through preclinical studies to late-stage clinical trials towards approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives, and any of these changes could require the conduct of bridging studies and could cause our product candidates to perform differently and affect the results of planned clinical trials or other future clinical trials. We have limited experience in drug formulation or manufacturing. Currently, we rely on an extensive network of contract manufacturers, and in some cases sole source suppliers, for the production of our product candidates for current and planned clinical trials.

In order to conduct clinical trials of our product candidates, or supply commercial products, if approved, we will need to manufacture them in large quantities. Our contract development and manufacturing organizations, or CDMOs, may be unable to successfully increase the manufacturing capacity for any of our product candidates in a timely or cost-effective manner, or at all. In addition, quality issues may arise during scale-up activities. If our CDMOs are unable to successfully scale up the manufacture of our product candidates in sufficient quality and quantity, the development, testing and clinical trials of that product candidate may be delayed or become infeasible, and regulatory approval or commercial launch of any resulting product may be delayed or not obtained, which could significantly harm our business. The same risk would apply to our internal manufacturing facilities, should we in the future decide to build internal manufacturing capacity. In addition, building internal

manufacturing capacity would carry significant risks in terms of being able to plan, design and execute on a complex project to build manufacturing facilities in a timely and cost-efficient manner, and the resources associated with ensuring the ongoing regulatory compliance of such manufacturing facilities would be significant.

In addition, the manufacturing process for any products that we may develop is subject to FDA, EMA, and foreign regulatory authority approval processes and continuous oversight, and we will need to contract with manufacturers who can meet all applicable FDA, EMA and foreign regulatory authority requirements, including complying with current good manufacturing practices, or cGMPs, on an ongoing basis. Although our agreements with our CDMOs require them to perform according to certain cGMP requirements such as those relating to quality control, quality assurance and qualified personnel, we cannot control the ability of our CDMOs to implement and maintain these standards. If we or our third-party manufacturers are unable to reliably produce products to specifications acceptable to the FDA, EMA or other regulatory authorities, we may not obtain or maintain the approvals we need to commercialize such products. Even if we obtain regulatory approval for any of our product candidates, there is no assurance that either we or our CDMOs will be able to manufacture the approved product to specifications acceptable to the FDA, EMA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product, or to meet potential future demand. Any of these challenges could delay completion of clinical trials, require bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates, impair commercialization efforts, increase our cost of goods and have an adverse effect on our business, financial condition, results of operations and growth prospects.

If any third-party manufacturer of our product candidates is unable to increase the scale of its production of our product candidates, and/or increase the product yield of its manufacturing, then our costs to manufacture the product may increase and commercialization may be delayed.

In order to produce sufficient quantities to meet the demand for clinical trials and, if approved, subsequent commercialization of our product candidates that we may develop, our third-party manufacturers will be required to increase their production and optimize their manufacturing processes while maintaining the quality of the product. The transition to larger scale production could prove difficult. In addition, if our third party manufacturers are not able to optimize their manufacturing processes to increase the product yield for our product candidates, or if they are unable to produce increased amounts of our product candidates while maintaining the quality of the product, then we may not be able to meet the demands of clinical trials or market demands, which could decrease our ability to generate profits and have a material adverse impact on our business and results of operation.

We depend on third-party suppliers for key raw materials used in our manufacturing processes, some of which are our sole source of supply, and the loss of these third-party suppliers or their inability to supply us with adequate raw materials could harm our business.

We rely on our CDMOs to purchase from third-party suppliers the materials necessary to produce our product candidates for our clinical trials. We do not have, nor do we expect to enter into, any agreements for the commercial production of these raw materials, and we do not expect to have any control over the process or timing of our CDMOs' acquisition of raw materials needed to produce our product candidates. Any significant delay in the supply of a product candidate or the raw material components thereof for an ongoing clinical trial due to a manufacturer's need to replace a third-party supplier of raw materials could considerably delay completion of our clinical trials, product testing and potential regulatory approval of our product candidates. Additionally, if our future manufacturers or we are unable to purchase these raw materials to commercially produce any of our product candidates that gains regulatory approvals, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

Furthermore, for those third-party suppliers who may be our sole source of supply of certain materials, we may not have arrangements in place for a redundant or second-source supply of any such materials in the event any of our current suppliers cease their operations for any reason. Establishing additional or replacement suppliers for the raw materials used in our product candidates, if required, may not be accomplished quickly. If we are able to find a replacement supplier, such replacement supplier would need to be qualified and may require additional regulatory inspection or approval, which could result in further delay.

We expect to depend on collaborations with third parties for the research, development and commercialization of certain of the product candidates we may develop. If any such collaborations are not successful, we may not be able to realize the market potential of those product candidates.

We may seek third-party collaborators for the research, development and commercialization of certain of the product candidates we may develop. For example, we have a collaboration with Ionis Pharmaceuticals, Inc. to further our development of product candidates and to enhance our research efforts directed to developing a product candidate for the treatment of epilepsy. Our likely collaborators for any other collaboration arrangements include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies, biotechnology companies and academic institutions. If we enter into any such arrangements with any third parties, we will likely have shared or limited control over the amount and timing of resources that our collaborators dedicate to the development or potential commercialization of any product candidates we may seek to develop with them. Our ability to generate revenue from these arrangements with commercial entities will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements. We cannot predict the success of any collaboration that we enter into.

Collaborations involving our research programs, or any product candidates we may develop, pose the following risks to us:

- collaborators generally have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not properly obtain, maintain, enforce or defend intellectual property or proprietary rights relating to our product candidates or research programs, or may use our proprietary information in such a way as to expose us to potential litigation or other intellectual property related proceedings, including proceedings challenging the scope, ownership, validity and enforceability of our intellectual property;
- collaborators may own or co-own intellectual property covering our product candidates or research programs that results from our collaboration with them, and in such cases, we may not have the exclusive right to commercialize such intellectual property or such product candidates or research programs;
- we may need the cooperation of our collaborators to enforce or defend any intellectual property we contribute to or that arises out of our collaborations, which may not be provided to us;
- collaborators may control certain interactions with regulatory authorities, which may impact our ability to obtain and maintain regulatory approval of our products candidates;
- disputes may arise between the collaborators and us that result in the delay or termination of the research, development or commercialization of our product candidates or research programs or that result in costly litigation or arbitration that diverts management attention and resources;
- collaborators may decide to not pursue development and commercialization of any product candidates we develop or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborator's

strategic focus or available funding or external factors such as an acquisition that diverts resources or creates competing priorities;

- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates or research programs if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- collaborators may restrict us from researching, developing or commercializing certain products or technologies without their involvement;
- collaborators with marketing and distribution rights to one or more product candidates may not commit sufficient resources to the marketing and distribution of such product candidates;
- we may lose certain valuable rights under circumstances identified in our collaborations, including if we undergo a change of control;
- collaborators may grant sublicenses to our technology or product candidates or undergo a change of control and the sublicensees or new owners may decide to take the collaboration in a direction which is not in our best interest;
- collaborators may become bankrupt, which may significantly delay our research or development programs, or may cause us to lose access to valuable technology, know-how or intellectual property of the collaborator relating to our products, product candidates or research programs;
- key personnel at our collaborators may leave, which could negatively impact our ability to productively work with our collaborators;
- collaborations may require us to incur short and long-term expenditures, issue securities that dilute our stockholders or disrupt our management and business;
- if our collaborators do not satisfy their obligations under our agreements with them, or if they terminate our collaborations with them, we may not be able to develop or commercialize product candidates as planned;
- collaborations may require us to share in development and commercialization costs pursuant to budgets that we do not fully control and our failure to share in such costs could have a detrimental impact on the collaboration or our ability to share in revenue generated under the collaboration;
- collaborations may be terminated in their entirety or with respect to certain product candidates or technologies and, if so terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates or technologies; and
- collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. If a present or future collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our development or commercialization program under such collaboration could be delayed, diminished or terminated.

We may face significant competition in seeking appropriate collaborations. Recent business combinations among biotechnology and pharmaceutical companies have resulted in a reduced number of potential collaborators. In addition, the negotiation process is time-consuming and complex, and we may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the product candidate for which we are

seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop product candidates or bring them to market and generate product revenue.

If we enter into collaborations to develop and potentially commercialize any product candidates, we may not be able to realize the benefit of such transactions if we or our collaborator elects not to exercise the rights granted under the agreement or if we or our collaborator are unable to successfully integrate a product candidate into existing operations and company culture. The failure to develop and commercialize a product candidate pursuant to our agreements with our current or future collaborators could prevent us from receiving future payments under such agreements, which could negatively impact our revenues. In addition, if our agreement with any of our collaborators terminates, our access to technology and intellectual property licensed to us by that collaborator may be restricted or terminate entirely, which may delay our continued development of our product candidates utilizing the collaborator's technology or intellectual property or require us to stop development of those product candidates completely. We may also find it more difficult to find a suitable replacement collaborator or attract new collaborators, and our development programs may be delayed or the perception of us in the business and financial communities could be adversely affected. Many of the risks relating to product development, regulatory approval, and commercialization described in this "Risk Factors" section also apply to the activities of our collaborators and any negative impact on our collaborators may adversely affect us.

We may acquire businesses or products, or form strategic alliances, in the future, and we may not realize the benefits of such acquisitions or alliances.

We may acquire additional businesses or products, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new products resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure that, following any such acquisition, we will achieve the expected synergies to justify the transaction.

Risks Related to Employee Matters, Managing Our Business and Operations

Our business is subject to economic, political, regulatory and other risks associated with international operations.

Our business is subject to risks associated with conducting business internationally. Some of our suppliers and collaborative relationships are located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including:

- economic weakness, including inflation, or political instability in particular non-U.S. economies and markets;
- differing and changing regulatory requirements in non-U.S. countries;
- challenges enforcing our contractual and intellectual property rights, especially in those foreign countries that do not respect and protect intellectual property rights to the same extent as the United States;
- difficulties in compliance with non-U.S. laws and regulations;

- changes in non-U.S. regulations and customs, tariffs and trade barriers;
- changes in non-U.S. currency exchange rates and currency controls;
- changes in a specific country's or region's political or economic environment;
- trade protection measures, import or export licensing requirements or other restrictive actions by U.S. or non-U.S. governments;
- negative consequences from changes in tax laws;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- difficulties associated with staffing and managing international operations, including differing labor relations
- potential liability under the FCPA, U.K. Bribery Act of 2010 or comparable foreign laws;
- business interruptions resulting from geo-political actions, including war and terrorism, natural disasters including earthquakes, typhoons, floods and fires, or health epidemics such as COVID-19; and
- cyberattacks, which are growing in frequency, sophistication and intensity, and are becoming increasingly difficult to detect.

These and other risks associated with our planned international operations may materially adversely affect our ability to attain profitable operations.

A pandemic, epidemic or outbreak of an infectious disease in the United States or worldwide may adversely affect our business.

If a pandemic, epidemic or outbreak of an infectious disease occurs in the United States or worldwide our business may be adversely affected. In December 2019, a novel strain of coronavirus named SARS-CoV-2 was identified in Wuhan, China. This virus continues to spread globally, including in the United States and the disease it causes, COVID-19, has been declared a pandemic by the World Health Organization. The COVID-19 pandemic has impacted the global economy and may impact our operations, including the potential interruption of our clinical trial activities, regulatory reviews and our supply chain. For example, the COVID-19 pandemic may delay enrollment in our clinical trials due to prioritization of hospital resources toward the outbreak or other factors, and some patients may be unwilling to enroll in our trials or be unable to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services, which would delay our ability to conduct clinical trials or release clinical trial results and could delay our ability to obtain regulatory approval and commercialize our product candidates. Furthermore, the spread of the virus may affect the operations of key governmental agencies, such as the FDA, which may delay the development or approval process for our product candidates.

The spread of an infectious disease, including COVID-19, may also result in the inability of our suppliers to deliver components or raw materials on a timely basis or at all. In addition, hospitals may reduce staffing and reduce or postpone certain treatments in response to the spread of an infectious disease. Such events may result in a period of business disruption, and in reduced operations, or doctors and medical providers may be unwilling to participate in our clinical trials, any of which could materially affect our business, financial condition and results of operations. We continue to closely monitor the COVID-19 pandemic as we evolve our business continuity plans, clinical development plans and response strategy. The extent to which the COVID-19 pandemic impacts our business will depend on future developments, which are highly uncertain and cannot be predicted, including new

information which may emerge concerning the severity of the novel coronavirus and the actions to contain the coronavirus or treat its impact, among others. At present, we are not experiencing significant impact or delays from the COVID-19 pandemic on our business, operations and, if approved, commercialization plans. In addition, we have taken steps to mitigate against COVID-19 pandemic-related delays, and may take additional measures, intended to help minimize the risk of the virus to our employees, including temporarily requiring all employees to work remotely, suspending all non-essential travel worldwide for our employees, and discouraging employee attendance at industry events and in-person work-related meetings, which could negatively affect our business.

A significant outbreak of other infectious diseases in the future also could result in a widespread health crisis that could adversely affect the economies and financial markets worldwide, resulting in an economic downturn that could impact our business, financial condition and results of operations.

We depend heavily on our executive officers, principal consultants and others, and the loss of their services would materially harm our business.

Our success depends, and will likely continue to depend, upon our ability to hire, retain the services of our current executive officers, principal consultants and others, including Marcio Souza, our President and Chief Executive Officer, Bernard Ravina, our Chief Medical Officer, and Stuart Chaffee, our Chief Financial Officer. We have entered into employment agreements with Mr. Souza, Dr. Ravina and Dr. Chaffee, but they may terminate their employment with us at any time. The loss of their services might impede the achievement of our research, development and commercialization objectives. We do not maintain “key person” insurance for any of our executives or other employees.

Our ability to compete in the biotechnology and pharmaceuticals industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. Our industry has experienced a high rate of turnover of management personnel in recent years. Replacing executive officers or other key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to develop, gain regulatory approval of and commercialize products successfully.

Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key employees on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions.

We rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategies. Our consultants and advisors may be employed by other entities and may have commitments under consulting or advisory contracts with those entities that may limit their availability to us. If we are unable to continue to attract and retain highly qualified personnel, our ability to develop and commercialize our product candidates will be limited.

We only have a limited number of employees to manage and operate our business. If we are unable to hire to retain adequate personnel, then we may not be able to meet our operational goals.

As of June 30, 2020, we had 40 full-time employees, including three temporary employees. Our focus on the clinical development of PRAX-114, PRAX-944 and PRAX-562 requires us to optimize cash utilization and to manage and operate our business in a highly efficient manner. We cannot ensure that we will be able to hire and/or retain adequate staffing levels to develop PRAX-114, PRAX-944 and PRAX-562 or to run our operations and/or to accomplish all of the objectives that we otherwise would seek to accomplish.

Our employees, independent contractors, consultants, collaborators and contract research organizations may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements, which could cause significant liability for us and harm our reputation.

We are exposed to the risk that our employees, independent contractors, consultants, collaborators and contract research organizations may engage in fraudulent conduct or other illegal activity. Misconduct by those parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates:

- regulatory authorities, including those laws requiring the reporting of true, complete and accurate information to such authorities;
- manufacturing standards;
- federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable non-U.S. regulatory authorities; and
- laws that require the accurate reporting of financial information or data.

Activities subject to these laws also involve the improper use or misrepresentation of information obtained in the course of clinical trials, creating fraudulent data in our preclinical studies or clinical trials or illegal misappropriation of product materials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter misconduct, and the precautions we take to detect and prevent this kind of activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws, standards or regulations. Additionally, we are subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, disgorgement, integrity oversight and reporting obligations, possible exclusion from participation in the United States in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings and curtailment of our operations, any of which could have a material adverse effect on our ability to operate our business and our results of operations.

We expect to expand our organization, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of regulatory affairs and sales, marketing and distribution, as well as to support our public company operations. To manage these growth activities, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Our management may need to devote a significant amount of its attention to managing these growth activities. Moreover, our expected growth could require us to relocate to a different geographic area of the country. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion or relocation of our operations, retain key employees, or identify, recruit and train additional qualified personnel. Our inability to manage the expansion or relocation of our operations effectively may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could also require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If we are unable to effectively manage our expected

growth, our expenses may increase more than expected, our ability to generate revenues could be reduced and we may not be able to implement our business strategy, including the successful commercialization of our product candidates.

Cyber-attacks or other failures in our telecommunications or information technology systems, or those of our collaborators, contract research organizations, third-party logistics providers, distributors or other contractors or consultants, could result in information theft, data corruption and significant disruption of our business operations.

We, our collaborators, our CROs, third-party logistics providers, distributors and other contractors and consultants utilize information technology, or IT, systems and networks to process, transmit and store electronic information in connection with our business activities. As use of digital technologies has increased, cyber incidents, including third parties gaining access to employee accounts using stolen or inferred credentials, computer malware, viruses, spamming, phishing attacks or other means, and deliberate attacks and attempts to gain unauthorized access to computer systems and networks, have increased in frequency and sophistication. While we have not experienced any such system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. These threats pose a risk to the security of our, our collaborators', our CROs', third-party logistics providers', distributors' and other contractors' and consultants' systems and networks, and the confidentiality, availability and integrity of our data. There can be no assurance that we will be successful in preventing cyber-attacks or successfully mitigating their effects. Similarly, there can be no assurance that our collaborators, CROs, third-party logistics providers, distributors and other contractors and consultants will be successful in protecting our clinical and other data that is stored on their systems. Any cyber-attack, data breach or destruction or loss of data could result in a violation of applicable U.S. and international privacy, data protection and other laws, and subject us to litigation and governmental investigations and proceedings by federal, state and local regulatory entities in the United States and by international regulatory entities, resulting in exposure to material civil and/or criminal liability. Further, our general liability insurance and corporate risk program may not cover all potential claims to which we are exposed and may not be adequate to indemnify us for all liability that may be imposed; and could have a material adverse effect on our business and prospects. For example, the loss of clinical trial data from completed, ongoing or planned clinical trials for any of our product candidates could result in delays in our development and regulatory approval efforts and significantly increase our costs to recover or reproduce the data. In addition, we may suffer reputational harm or face litigation or adverse regulatory action as a result of cyber-attacks or other data security breaches and may incur significant additional expense to implement further data protection measures.

We rely on a set of cloud-based software services and access these services via the Internet for the vast majority of our computing, storage, bandwidth and other services. Any disruption of or interference with our use of our cloud-based services would negatively affect our operations and could seriously harm our business.

We use several distributed computing infrastructure platforms for business operations, or what is commonly referred to as "cloud" computing services and we access these services via the Internet. Any transition of the cloud services currently provided by an existing vendor to another cloud provider would be difficult to implement and will cause us to incur significant time and expense. Given this, any significant disruption of or interference with our use of these cloud computing services would negatively impact our operations and our business would be seriously harmed. If our employees or partners are not able to access our cloud computing services or encounter difficulties in doing so, we may experience business disruption. The level of service provided by our cloud computing vendors, including the ability to secure our confidential information and the confidential information of third parties that is shared with us, may also impact the perception of our company and could seriously harm our business and reputation and create liability for us. If a cloud computing service that we use

experiences interruptions in service regularly or for a prolonged basis, or other similar issues, our business could be seriously harmed.

In addition, a cloud computing service may take actions beyond our control that could seriously harm our business, including:

- discontinuing or limiting our access to its platform;
- increasing pricing terms;
- terminating or seeking to terminate our contractual relationship altogether; or
- modifying or interpreting its terms of service or other policies in a manner that impacts our ability to run our business and operations.

Our cloud computing services have broad discretion to change and interpret its terms of service and other policies with respect to us, and those actions may be unfavorable to us. Our cloud computing services may also alter how we are able to process data on the platform. If a cloud computing services makes changes or interpretations that are unfavorable to us, our business could be seriously harmed.

Our efforts to protect the information shared with us may be unsuccessful due to the actions of third parties, software bugs or other technical malfunctions, employee error or malfeasance or other factors. In addition, third parties may attempt to fraudulently induce employees or users to disclose information to gain access to our data or third-party data entrusted to us. If any of these events occur, our or third-party information could be accessed or disclosed improperly. Some partners or collaborators may store information that we share with them on their own computing system. If these third parties fail to implement adequate data-security practices or fail to comply with our policies, our data may be improperly accessed or disclosed. And even if these third parties take all of these steps, their networks may still suffer a breach, which could compromise our data.

Any incidents where our information is accessed without authorization, or is improperly used, or incidents that violate our policies, could damage our reputation and our brand and diminish our competitive position. In addition, affected parties or government authorities could initiate legal or regulatory action against us over those incidents, which could cause us to incur significant expense and liability or result in orders or consent decrees forcing us to modify our business practices. Concerns over our privacy practices, whether actual or unfounded, could damage our reputation and brand and deter users, advertisers and partners from using our products and services. Any of these occurrences could seriously harm our business.

We are also subject to many federal, state and foreign laws and regulations, including those related to privacy, rights of publicity, data protection, content regulation, intellectual property, health and safety, competition, protection of minors, consumer protection, employment and taxation. These laws and regulations are constantly evolving and may be interpreted, applied, created or amended in a manner that could seriously harm our business

We have identified conditions and events that raise substantial doubt about our ability to continue as a going concern.

We may be forced to delay, reduce or eliminate some or all of our research and development programs, product portfolio expansion or commercialization efforts if we are unable to obtain additional funding to support our current operating plan.

As of December 31, 2019, we had $44.8 million of cash and cash equivalents. To date, we have financed our operations with proceeds from sales of our redeemable convertible preferred stock and the issuance of convertible debt. We have incurred recurring losses since our inception, including net

losses of $35.5 million for the year ended December 31, 2019. We expect to continue to generate operating losses for the foreseeable future as we continue to invest significantly in the research and development of our programs. As a result, there is a significant degree of uncertainty as to how long our existing cash and cash equivalents will be sufficient to fund our operations. These conditions raise substantial doubt about our ability to continue as a going concern for a period of at least one year from the date our consolidated financial statements are issued, and our independent registered public accounting firm has included an explanatory paragraph relating to our ability to continue as a going concern in its report on our audited consolidated financial statements included elsewhere in this prospectus.

We are seeking the anticipated proceeds from this offering to provide additional funding for our operations. Even if the offering is consummated, we may be required to obtain additional funding whether through private or public equity transactions, debt financings or other capital sources, including collaborations with other companies or other strategic transactions and such additional funding may not be available on terms we find acceptable or favorable. There is inherent uncertainty associated with these fundraising activities and they are not considered probable. If we are unable to obtain sufficient capital to continue to advance our programs, we would be forced to delay, reduce or eliminate our research and development programs and any future commercialization efforts. Accordingly, our plans do not alleviate substantial doubt of our ability to continue as a going concern for a period of at least one year after the date our consolidated financial statements are issued.

Nevertheless, our consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty. We will need to raise additional capital in this offering and/or otherwise to fund our future operations and remain as a going concern. However, we cannot guarantee that we will be able to obtain sufficient additional funding in this offering or otherwise or that such funding, if available, will be obtainable on terms favorable to us. In the event that we are unable to obtain sufficient additional funding, there can be no assurance that we will be able to continue as a going concern.

Legislation or other changes in U.S. tax law could adversely affect our business and financial condition.

The rules dealing with U.S. federal, state and local income taxation are constantly under review by persons involved in the legislative process and by the Internal Revenue Service and the U.S. Treasury Department. Changes to tax laws (which changes may have retroactive application) could adversely affect us or holders of our common stock. In recent years, many changes have been made to applicable tax laws and changes are likely to continue to occur in the future.

For example, the Tax Cuts and Jobs Act, or the TCJA, was enacted in 2017 and made significant changes to corporate taxation, including the reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, the limitation of the tax deduction for net interest expense to 30% of adjusted taxable income (except for certain small businesses), the limitation of the deduction for net operating losses from taxable years beginning after December 31, 2017 to 80% of current year taxable income and the elimination of net operating loss carrybacks generated in taxable years ending after December 31, 2017 (though any such net operating losses may be carried forward indefinitely) and the modification or repeal of many business deductions and credits. In addition, on March 27, 2020, President Trump signed into law the “Coronavirus Aid, Relief, and Economic Security Act” or the CARES Act, which included certain changes in tax law intended to stimulate the U.S. economy in light of the COVID-19 public health emergency, including temporary beneficial changes to the treatment of net operating losses, interest deductibility limitations and payroll tax matters.

It cannot be predicted whether, when, in what form or with what effective dates new tax laws may be enacted, or regulations and rulings may be enacted, promulgated or issued under existing or new

tax laws, which could result in an increase in our or our shareholders' tax liability or require changes in the manner in which we operate in order to minimize or mitigate any adverse effects of changes in tax law or in the interpretation thereof.

Our ability to use our U.S. net operating loss carryforwards and certain other U.S. tax attributes may be limited.

Our ability to use our U.S. federal and state net operating losses to offset potential future taxable income and related income taxes that would otherwise be due is dependent upon our generation of future taxable income, and we cannot predict with certainty when, or whether, we will generate sufficient taxable income to use all of our net operating losses.

Unused losses for the tax year beginning before January 1, 2018 and prior tax years will carry forward to offset future taxable income, if any, until such unused losses expire. Unused losses generated for the tax year beginning after December 31, 2017, under new tax legislation will not expire and may be carried forward indefinitely, and generally may not be carried back to prior taxable years, except that, under the CARES Act, net operating losses generated in 2018, 2019 and 2020 may be carried back five taxable years. Additionally, for taxable years beginning after December 31, 2020, the deductibility of such U.S. federal net operating losses is limited to 80% of our taxable income in any future taxable year. In addition, both our current and our future unused losses may be subject to limitation under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, if we undergo an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three-year period. We may have experienced such ownership changes in the past, and we may experience ownership changes in the future as a result of this offering or subsequent shifts in our stock ownership, some of which are outside our control.

Risks Related to Our Common Stock and This Offering

There has been no prior public market for our common stock, the stock price of our common stock may be volatile or may decline regardless of our operating performance, an active trading market for our common stock may not develop and you may not be able to resell your shares at or above the initial public offering price.

Prior to this offering there has been no public market for shares of our common stock. You may not be able to sell your shares quickly or at the market price if trading in shares of our common stock is not active. The initial public offering price for our common stock will be determined through negotiations with the underwriters, and the negotiated price may not be indicative of the market price of the common stock after the offering. Although our common stock has been approved for listing on The Nasdaq Global Market, an active or liquid market in our common stock may not develop upon the completion of this offering or, if it does develop, it may not be sustainable. As a result of these and other factors, you may be unable to resell your shares of our common stock at or above the initial public offering price.

Further, an inactive market may also impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic collaborations or acquire companies or products by using our shares of common stock as consideration.

The price of our stock may be volatile, and you could lose all or part of your investment.

The trading price of our common stock following this offering is likely to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control,

including limited trading volume. In addition to the factors discussed in this "Risk Factors" section and elsewhere in this prospectus, these factors include:

- the commencement, enrollment, completion or results of our current Phase 2a clinical trials of PRAX-114 and PRAX-944 and current Phase 1 trial of PRAX-562;
- any delay in identifying and advancing a clinical candidate for our other programs;
- any delay in our regulatory filings for PRAX-114, PRAX-944, PRAX-562 or our future product candidates and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including without limitation the FDA's issuance of a "refusal to file" letter or a request for additional information;
- adverse results or delays, suspensions or terminations in future preclinical studies or clinical trials;
- our decision to initiate a clinical trial, not to initiate a clinical trial or to terminate an existing clinical trial;
- adverse regulatory decisions, including failure to receive regulatory approval of PRAX-114, PRAX-944, PRAX-562 or any other product candidate or the failure of a regulatory authority to accept data from preclinical studies or clinical trials conducted in other countries;
- changes in laws or regulations applicable to PRAX-114, PRAX-944, PRAX-562 or any other product candidate, including but not limited to clinical trial requirements for approvals;
- adverse developments concerning our manufacturers;
- our inability to obtain adequate product supply for any approved product or inability to do so at acceptable prices;
- our inability to establish collaborations, if needed;
- our failure to commercialize our product candidates, if approved;
- additions or departures of key scientific or management personnel;
- unanticipated serious safety concerns related to the use of PRAX-114, PRAX-944, PRAX-562 or any other product candidate;
- introduction of new products or services offered by us or our competitors;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- our ability to effectively manage our growth;
- actual or anticipated variations in quarterly operating results;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;
- publication of research reports about us or our industry, or product candidates in particular, or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- changes in the structure of the healthcare payment systems;
- overall performance of the equity markets;
- sales of our common stock by us or our stockholders in the future;
- trading volume of our common stock;
- changes in accounting practices;

- ineffectiveness of our internal controls;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or stockholder litigation;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general, and the market for biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies, including as a result of the COVID-19 pandemic. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. If the market price of our common stock after this offering does not exceed the initial public offering price, you may not realize any return on your investment in us and may lose some or all of your investment. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources.

We do not intend to pay dividends on our common stock so any returns will be limited to the value of our stock.

We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Furthermore, future debt or other financing arrangements may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Any return to stockholders will therefore be limited to the appreciation of their stock.

Our executive officers, directors and their affiliates and our principal stockholders own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Based on shares outstanding as of , 2020 and immediately following the completion of this offering, our executive officers, directors and their affiliates and our principal stockholders will beneficially hold, in the aggregate, approximately % of our outstanding voting stock, excluding any shares purchased in this offering. These stockholders, acting together, would be able to significantly influence all matters requiring stockholder approval. These stockholders acquired their shares of common stock (including shares of common stock issuable upon the conversion of preferred stock) for less than the price of the shares of common stock being acquired in this offering, and these stockholders may have interests, with respect to their common stock, that are different from those of investors in this offering and the concentration of voting power among these stockholders may have an adverse effect on the price of our common stock. This concentration of ownership control may adversely affect the market price of our common stock by:

- delaying, deferring or preventing a change in control;
- entrenching our management and the board of directors;
- impeding a merger, consolidation, takeover or other business combination involving us that other stockholders may desire; and/or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

See the "Principal Stockholders" section of this prospectus for more information regarding the ownership of our outstanding common stock by our executive officers, directors, principal stockholders and their affiliates.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.

The initial public offering price will be substantially higher than the pro forma as adjusted net tangible book value per share of our common stock after this offering. Investors purchasing common stock in this offering will pay a price per share that substantially exceeds the pro forma as adjusted net tangible book value per share after this offering. As a result, investors purchasing common stock in this offering will incur immediate dilution of $ per share, based on the initial public offering price of $ per share, representing the difference between our pro forma as adjusted net tangible book value per share after giving effect to this offering and the initial public offering price. Further, investors purchasing common stock in this offering will contribute approximately % of the total amount invested by stockholders since our inception, but will own only approximately % of the shares of common stock outstanding after this offering.

This dilution is due to our investors who purchased shares prior to this offering having paid substantially less when they purchased their shares than the price offered to the public in this offering. To the extent outstanding options are exercised, there will be further dilution to new investors. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. For a further description of the dilution that you will experience immediately after this offering, see the section entitled “Dilution.”

We are an emerging growth company, and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an emerging growth company, or EGC, as defined in the Jumpstart Our Business Startups Act, or the JOBS Act, enacted in April 2012. For as long as we continue to be an EGC, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not EGCs, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements and exemptions from the requirements of holding nonbinding advisory votes on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an EGC for up to five years following the year in which we complete this offering, although circumstances could cause us to lose that status earlier. We will remain an EGC until the earlier of (i) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.07 billion or (c) in which we are deemed to be a large accelerated filer, which requires the market value of our common stock that is held by non-affiliates to exceed $700.0 million as of the prior June 30th, and (ii) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

We may choose to take advantage of some, but not all, of the available exemptions. We have taken advantage of reduced reporting burdens in this prospectus. In particular, we have not included all of the executive compensation information that would be required if we were not an EGC. We cannot predict whether investors will find our common stock less attractive if we rely on certain or all of these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

Under the JOBS Act, EGCs can also delay adopting new or revised accounting standards until such time as those standards apply to private companies, which may make our financial statements less comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We will incur significant increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives.

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. We will be subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which will require, among other things, that we file with the SEC annual, quarterly and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, as well as rules subsequently adopted by the SEC and The Nasdaq Global Market to implement provisions of the Sarbanes-Oxley Act, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial reporting controls and changes in corporate governance practices. Further, in July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, was enacted. There are significant corporate governance and executive compensation related provisions in the Dodd-Frank Act that require the SEC to adopt additional rules and regulations in these areas such as “say on pay” and proxy access. Recent legislation permits EGCs to implement many of these requirements over a longer period and up to five years from the pricing of this offering. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We expect the rules and regulations applicable to public companies to substantially increase our legal and financial compliance costs and to make some activities more time-consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have an adverse effect on our business. The increased costs will decrease our net income or increase our net loss, and may require us to reduce costs in other areas of our business or increase the prices of our products or services. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, stockholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our common stock.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation could cause us to fail to meet our reporting obligations. In addition, any testing by us conducted in connection with Section 404, or any subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our stock.

We will be required to disclose changes made in our internal controls and procedures on a quarterly basis and our management will be required to assess the effectiveness of these controls annually. However, for as long as we are an EGC, our independent registered public accounting firm

will not be required to attest to the effectiveness of our internal controls over financial reporting pursuant to Section 404. We could be an EGC for up to five years. An independent assessment of the effectiveness of our internal controls over financial reporting could detect problems that our management's assessment might not. Undetected material weaknesses in our internal controls over financial reporting could lead to restatements of our financial statements and require us to incur the expense of remediation.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

Upon completion of this offering, we will become subject to certain reporting requirements of the Exchange Act. Our disclosure controls and procedures are designed to reasonably assure that information required to be disclosed by us in reports we file or submit under the Exchange Act is accumulated and communicated to management, recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements or insufficient disclosures due to error or fraud may occur and not be detected.

Substantial amounts of our outstanding shares may be sold into the market when lock-up or market standoff periods end. If there are substantial sales of shares of our common stock, the price of our common stock could decline.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market after the lock-up and other legal restrictions on resale discussed in this prospectus lapse, the trading price of our common stock could decline. Based on shares of common stock outstanding as of , 2020, upon the completion of this offering we will have outstanding a total of shares of common stock. Of these shares, only the shares of common stock sold in this offering by us, plus any shares sold upon exercise of the underwriters' option to purchase additional shares, will be freely tradable without restriction in the public market immediately following this offering.

The lock-up agreements pertaining to this offering will expire 180 days from the date of this prospectus, subject to earlier release of all or a portion of the shares subject to such agreements by the representatives of the underwriters in this offering in their sole discretion. After the lock-up agreements expire, based upon the number of shares of common stock, on an as-converted basis, outstanding as of , 2020, up to an additional shares of common stock will be eligible for sale in the public market. Approximately % of these additional shares are beneficially held by directors, executive officers and their affiliates and will be subject to certain limitations of Rule 144 under the Securities Act of 1933, as amended, or the Securities Act.

In addition, shares of common stock that are either subject to outstanding options or reserved for future issuance under our existing equity compensation plans will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline. Additionally, the number of shares of our common stock reserved for issuance under our 2020 Stock Option and Incentive Plan will automatically increase on January 1 of each year, beginning on January 1, 2021, by % of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of

directors or compensation committee. Moreover, the number of shares of our common stock reserved for issuance under our 2020 Employee Stock Purchase Plan will automatically increase on January 1 of each year, beginning on January 1, 2021, by the lesser of shares of common stock, % of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of directors or compensation committee. Unless our board of directors elects not to increase the number of shares available for future grant each year, our stockholders may experience additional dilution.

After this offering, the holders of shares of our common stock will be entitled to rights with respect to the registration of their shares under the Securities Act as provided under the terms of an investors' rights agreement between us and the holders of our redeemable convertible preferred stock, subject to the 180-day lock-up agreements described above. See "Description of Capital Stock—Registration Rights." Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares held by affiliates, as defined in Rule 144 under the Securities Act. Any sales of securities by these stockholders could have a material adverse effect on the trading price of our common stock.

We have broad discretion in the use of our existing cash, cash equivalents and short-term investments and the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of our existing cash, cash equivalents and short-term investments and the net proceeds from this offering, including for any of the purposes described in the section entitled "Use of Proceeds," and you will not have the opportunity as part of your investment decision to assess whether such proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of our existing cash, cash equivalents and short-term investments and the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management might not apply our existing cash, cash equivalents and short-term investments and the net proceeds from this offering in ways that ultimately increase the value of your investment. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

Affiliates of Blackstone Securities Partners L.P., an underwriter in this offering, will have an interest in this offering beyond customary underwriting discounts and commissions.

Certain affiliates of Blackstone Securities Partners L.P., an underwriter in this offering, beneficially own more than 10% of our outstanding preferred equity prior to the consummation of this offering. Therefore, Blackstone Securities Partners L.P. is deemed to have a conflict of interest within the meaning of Rule 5121 of the Financial Industry Regulatory Authority, Inc., or FINRA Rule 5121. Accordingly, this offering is being conducted in accordance with FINRA Rule 5121. See "Underwriting (Conflicts of Interest)" for additional information.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock and may prevent or frustrate attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation and amended and restated bylaws, which are to become effective upon the completion of this offering, contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;
- a prohibition on stockholder action through written consent, which requires that all stockholder actions be taken at a meeting of our stockholders;
- a requirement that special meetings of stockholders be called only by the board of directors acting pursuant to a resolution approved by the affirmative vote of a majority of the directors then in office;
- advance notice requirements for stockholder proposals and nominations for election to our board of directors;
- a requirement that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of not less than two-thirds of all outstanding shares of our voting stock then entitled to vote in the election of directors;
- a requirement of approval of not less than two-thirds of all outstanding shares of our voting stock to amend any bylaws by stockholder action or to amend specific provisions of our certificate of incorporation; and
- the authority of the board of directors to issue convertible preferred stock on terms determined by the board of directors without stockholder approval and which convertible preferred stock may include rights superior to the rights of the holders of common stock.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the General Corporation Law of the State of Delaware, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These anti-takeover provisions and other provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing or cause us to take other corporate actions you desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. Securities and industry analysts do not currently, and may never, publish research on our company. If no securities or industry analysts commence coverage of our company, the trading price for our stock would likely be negatively impacted. In the event securities or industry analysts initiate coverage, if one or more of the analysts who covers us downgrades our stock or publishes inaccurate or unfavorable research about our business, our stock price may decline. If one or more of these analysts ceases coverage of our

company or fails to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

Our bylaws to be effective upon the consummation of this offering designate certain courts as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.

Our bylaws that will become effective upon the completion of this offering provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for any state law claims for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers and employees to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL, our amended and restated certificate of incorporation or our bylaws (in each case, as they may be amended from time to time) or (iv) any action asserting a claim that is governed by the internal affairs doctrine, in each case subject to the Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein; provided, however, that this exclusive forum provision will not apply to any causes of action arising under the Securities Act or the Exchange Act. Our bylaws further provide that, unless we consent in writing to an alternative forum, the United States District Court for the District of Massachusetts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. We have chosen the United States District Court for the District of Massachusetts as the exclusive forum for such Securities Act causes of action because our principal executive offices are located in Cambridge, Massachusetts. In addition, our amended and restated bylaws will provide that any person or entity purchasing or otherwise acquiring any interest in shares of our common stock is deemed to have notice of and consented to the foregoing provisions. We recognize that the forum selection clause in our bylaws may impose additional litigation costs on stockholders in pursuing any such claims, particularly if the stockholders do not reside in or near the State of Delaware or the Commonwealth of Massachusetts, as applicable. Additionally, the forum selection clause in our bylaws may limit our stockholders' ability to bring a claim in a forum that they find favorable for disputes with us or our directors, officers or employees, which may discourage such lawsuits against us and our directors, officers and employees even though an action, if successful, might benefit our stockholders. The Court of Chancery of the State of Delaware or the United States District Court for the District of Massachusetts may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders.

Our issuance of additional capital stock in connection with financings, acquisitions, investments, our stock incentive plans or otherwise will dilute all other stockholders.

We expect to issue additional capital stock in the future that will result in dilution to all other stockholders. We expect to grant equity awards to employees, directors and consultants under our stock incentive plans. We may also raise capital through equity financings in the future. As part of our business strategy, we may acquire or make investments in complementary companies, products or technologies and issue equity securities to pay for any such acquisition or investment. Any such issuances of additional capital stock may cause stockholders to experience significant dilution of their ownership interests and the per share value of our common stock to decline.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the sections entitled "Prospectus Summary," "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations," and "Business," contains express or implied forward-looking statements that are based on our management's belief and assumptions and on information currently available to our management. Although we believe that the expectations reflected in these forward-looking statements are reasonable, these statements relate to future events or our future operational or financial performance, and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by these forward-looking statements. Forward-looking statements in this prospectus include, but are not limited to, statements about:

- the success, cost and timing of our product development activities and clinical trials;
- our expectations regarding our ability to obtain and maintain intellectual property protection for our product candidates;
- the ability to license additional intellectual property relating to our product candidates from third parties and to comply with our existing license agreements and collaboration agreements;
- the ability and willingness of our third-party research institution collaborators to continue research and development activities relating to our product candidates;
- our ability to commercialize our products in light of the intellectual property rights of others;
- our ability to obtain funding for our operations, including funding necessary to complete further development and commercialization of our product candidates;
- the commercialization of our product candidates, if approved;
- our plans to research, develop and commercialize our product candidates;
- future agreements with third parties in connection with the commercialization of our product candidates and any other approved product;
- the size and growth potential of the markets for our product candidates, and our ability to serve those markets;
- the rate and degree of market acceptance of our product candidates;
- the pricing and reimbursement of our product candidates, if approved;
- regulatory developments in the United States and foreign countries;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately;
- the success of competing therapies that are or may become available;
- our ability to attract and retain key scientific or management personnel;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our expectations regarding the period during which we qualify as an emerging growth company under the Jumpstart Our Business Startups Act, enacted in April 2010;
- our use of the proceeds from this offering; and
- other risks and uncertainties, including those listed under the caption "Risk Factors."

In some cases, forward-looking statements can be identified by terminology, such as "may," "should," "expects," "intends," "plans," "anticipates," "believes," "estimates," "predicts," "potential,"

“continue,” or the negative of these terms or other comparable terminology. These statements are only predictions. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties and other factors, which are, in some cases, beyond our control and which could materially affect results. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under “Risk Factors” and elsewhere in this prospectus. If one or more of these risks or uncertainties occur, or if our underlying assumptions prove to be incorrect, actual events or results may vary significantly from those implied or projected by the forward-looking statements. No forward-looking statement is a guarantee of future performance. You should read this prospectus and the documents that we reference in this prospectus and have filed with the Securities and Exchange Commission as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from any future results expressed or implied by these forward-looking statements.

The forward-looking statements in this prospectus represent our views as of the date of this prospectus. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should therefore not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

This prospectus includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. We are responsible for all of the disclosure contained in this prospectus, and we believe that these sources are reliable; however, we have not independently verified the information contained in such publications.

USE OF PROCEEDS

We estimate that our net proceeds from the sale of shares of our common stock in this offering will be approximately $, or $ if the underwriters exercise in full their option to purchase additional shares, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share would increase (decrease) the net proceeds to us from this offering by $, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. Each increase (decrease) of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the net proceeds to us from this offering by $, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We currently estimate that we will use the net proceeds from this offering, together with our existing cash and cash equivalents, as follows:

- approximately $ million to advance PRAX-114 into and through the completion of our first registrational, Phase 2/3, clinical trial in MDD and to complete Part B (PMD) and Part C (longer-term dosing in MDD) of our ongoing Phase 2a clinical trial for PRAX-114;
- approximately $ million to complete our ongoing Phase 2a clinical trial and initiate a Phase 2/3 randomized, controlled clinical trial for PRAX-944 in ET;
- approximately $ million to complete our ongoing Phase 1 healthy volunteer trial and initiate the first patient study for PRAX-562; and
- the remainder for advancement of other programs in our pipeline and support of working capital and other general corporate purposes.

Based on our current plans, we believe that the net proceeds from this offering, together with our existing cash and cash equivalents, will be sufficient to fund our operations for at least the next months. We have based this estimate on assumptions that may prove to be incorrect, and we could use our available capital resources sooner than we currently expect.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the closing of this offering or the amounts that we will actually spend on the uses set forth above. The amounts and timing of our actual expenditures and the extent of clinical development may vary significantly depending on numerous factors, including the progress of our development, the status of and results from preclinical studies or clinical trials we may commence in the future, as well as any collaborations that we may enter into with third parties for our product candidates, and any unforeseen cash needs. We may also use a portion of the net proceeds to in-license, acquire or invest in additional businesses, technologies, products or assets, although currently we have no specific agreements, commitments or understandings in this regard. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending our use of proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation instruments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We intend to retain all available funds and any future earnings to fund the growth and development of our business. We do not intend to pay cash dividends to our stockholders in the foreseeable future. In addition, any future financing instruments could preclude us from paying dividends. Any future determination to pay dividends will be made at the discretion of our board of directors subject to applicable laws, and will depend upon, among other factors, our results of operations, financial condition, contractual restrictions and capital requirements. Investors should not purchase our common stock with the expectation of receiving cash dividends.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of December 31, 2019:

- on an actual basis;
- on a pro forma basis to give effect to: (i) the repurchase of 5,825,243 shares of our Series C redeemable convertible preferred stock at the original issuance price of $5.15 per share for an aggregate cash repurchase price of $30.0 million on February 19, 2020 and March 3, 2020, (ii) the sale and issuance of 4,563,108 shares of our Series C redeemable convertible preferred stock on April 15, 2020 and May 8, 2020 for gross cash proceeds of $23.5 million, (iii) the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 34,199,861 shares of common stock upon the consummation of this offering and (iv) the filing and effectiveness of our amended and restated certificate of incorporation upon the completion of this offering; and
- on a pro forma as adjusted basis to give further effect to the issuance and sale of shares of our common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma as adjusted information below is illustrative only, and our capitalization following the completion of this offering will depend on the actual initial public offering price and other terms of this offering determined at pricing.

You should read the information in this table together with our consolidated financial statements and the related notes appearing elsewhere in this prospectus, as well as the sections of this prospectus captioned “Selected Consolidated Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

	AS OF DECEMBER 31, 2019		
	ACTUAL	PRO FORMA	PRO FORMA AS ADJUSTED
	(In thousands, except share and per share data)		
Cash and cash equivalents	$ 44,815	$ 38,315	$
Redeemable convertible preferred stock (Series A, B, B-1 and C), $0.0001 par value; 36,724,132 shares authorized, 35,461,996 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	$ 121,121	$ –	$
Stockholders’ (deficit) equity:			
Preferred stock, $0.0001 par value; no shares authorized, issued or outstanding, actual; shares authorized, no shares issued or outstanding, pro forma and pro forma as adjusted	–	–	
Common stock, $0.0001 par value; 46,000,000 shares authorized, 3,573,959 shares issued and 3,470,834 shares outstanding, actual; shares authorized, 37,773,820 shares issued and 37,670,695 shares outstanding, pro forma; shares authorized, shares issued and outstanding, pro forma as adjusted	1	4	
Additional paid-in capital	–	114,495	
Accumulated deficit	(81,009)	(80,886)	
Total stockholders’ (deficit) equity	(81,008)	33,613	
Total	$ 40,113	$ 33,613	$

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of cash and cash equivalents, additional paid-in capital, total stockholders’ (deficit) equity and total capitalization by $ million, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, an increase (decrease) of 1,000,000 shares in the number of shares offered by us in this offering, as set forth of the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders’ (deficit) equity and total capitalization by $ million, assuming no change in the assumed initial public offering price per share, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

This table excludes:

- 3,498,270 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2019 under the 2017 Stock Incentive Plan, at a weighted average exercise price of $1.15 per share;
- 1,320,554 shares of common stock reserved for future issuance as of December 31, 2019 under the 2017 Stock Incentive Plan, any unissued shares of which will cease to be available for issuance upon the completion of this offering;
- shares of our common stock that will become available for future issuance under the 2020 Stock Option and Incentive Plan upon the effectiveness of the registration statement of which this prospectus forms a part; and
- shares of our common stock that will become available for future issuance under the 2020 Employee Stock Purchase Plan upon the effectiveness of the registration statement of which this prospectus forms a part.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the initial public offering price per share of common stock and the pro forma as adjusted net tangible book value per share of common stock immediately after this offering.

Our historical net tangible book value (deficit) as of December 31, 2019 was $(81.0) million, or $(22.67) per share of common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities and the carrying value of our redeemable convertible preferred stock. Historical net tangible book value (deficit) per share represents historical net tangible book value (deficit) divided by the 3,573,959 issued shares of our common stock, which include 103,125 shares of unvested restricted common stock, as of December 31, 2019.

Our pro forma net tangible book value as of December 31, 2019 was $33.6 million, or $0.89 per share of common stock. Pro forma net tangible book value is the amount of our total tangible assets less our total liabilities, after giving effect to: (i) the repurchase of 5,825,243 shares of our Series C redeemable convertible preferred stock at the original issuance price of $5.15 per share for an aggregate cash repurchase price of $30.0 million on February 19, 2020 and March 3, 2020, (ii) the sale and issuance of 4,563,108 shares of our Series C redeemable convertible preferred stock on April 15, 2020 and May 8, 2020 for gross cash proceeds of $23.5 million and (iii) the automatic conversion of all outstanding shares of our redeemable convertible preferred stock into an aggregate of 34,199,861 shares of common stock upon the consummation of this offering. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of issued shares of our common stock as of December 31, 2019, after giving effect to the pro forma adjustments described above.

After giving further effect to the sale and issuance of shares of our common stock in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of December 31, 2019 would have been $ million, or $ per share. This represents an immediate increase in pro forma as adjusted net tangible book value per share of $ to existing stockholders and immediate dilution of $ in pro forma as adjusted net tangible book value per share to new investors participating in this offering. Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the assumed initial public offering price per share paid by new investors. The pro forma as adjusted information below is illustrative only and will depend on the actual initial public offering price and other terms of this offering determined at pricing.

The following table illustrates this dilution on a per share basis to new investors:

Assumed initial public offering price per share		$
Historical net tangible book value (deficit) per share as of December 31, 2019	$(22.67)	
Increase in historical net tangible book value per share attributable to the automatic conversion of all outstanding shares of redeemable convertible preferred stock upon completion of this offering	23.56	
Pro forma net tangible book value per share as of December 31, 2019	0.89	
Increase in pro forma net tangible book value per share attributable to new investors participating in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors participating in this offering		$

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value by $, or $ per share, and increase (decrease) the dilution per share to investors participating in this offering by $ per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. An increase of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase our pro forma as adjusted net tangible book value by $, or $ per share, and decrease the dilution per share to investors participating in this offering by $ per share, assuming that the assumed initial public offering price remains the same, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. A decrease of 1,000,000 shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would decrease our pro forma as adjusted net tangible book value by $, or $ per share, and increase the dilution per share to investors participating in this offering by $ per share, assuming that the assumed initial public offering price remains the same and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters exercise their option in full to purchase additional shares of common stock in this offering, our pro forma as adjusted net tangible book value per share after this offering would be $, representing an immediate increase in pro forma as adjusted net tangible book value per share of $ to existing stockholders and immediate dilution in pro forma as adjusted net tangible book value per share of $ to investors participating in this offering, assuming an initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The following table summarizes, on the pro forma as adjusted basis described above as of December 31, 2019, the total number of shares of common stock purchased from us on an as converted to common stock basis, the total consideration paid or to be paid and the average price per share paid or to be paid by existing stockholders and by investors participating in this offering at an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. As the table shows, new investors purchasing common stock in this offering will pay an average price per share substantially higher than our existing stockholders paid.

	SHARES PURCHASED		TOTAL CONSIDERATION		AVERAGE PRICE PER SHARE
	NUMBER	PERCENTAGE	AMOUNT	PERCENTAGE	
			(In thousands)		
Existing stockholders		%	$	%	$
Investors participating in this offering					
Total		100%		$ 100%	$

A $1.00 increase (decrease) in the assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the total consideration paid by new investors by $ million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by percentage points, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. An increase (decrease) of 1,000,000 in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the total consideration paid by new investors by $ million and, in the case of an increase, would increase the percentage of total consideration paid by new investors by percentage points and, in the case of a decrease, would decrease the percentage of total consideration paid by new investors by percentage points, assuming no change in the assumed initial public offering price per share.

The table assumes no exercise of the underwriters' option to purchase additional shares in this offering. If the underwriters' option to purchase additional shares is exercised in full, the number of shares of our common stock held by existing stockholders would be reduced to % of the total number of shares of our common stock outstanding after this offering, and the number of shares of common stock held by new investors participating in the offering would be increased to % of the total number of shares outstanding after this offering.

The above discussion and tables are based on issued shares of our common stock, which include 103,125 shares of unvested restricted common stock, as of December 31, 2019 and exclude:

- 3,498,270 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2019 under the 2017 Stock Incentive Plan, at a weighted average exercise price of $1.15 per share;
- 1,320,554 shares of common stock reserved for future issuance as of December 31, 2019 under the 2017 Stock Incentive Plan, any unissued shares of which will cease to be available for issuance upon the completion of this offering;
- shares of our common stock that will become available for future issuance under the 2020 Stock Option and Incentive Plan upon the effectiveness of the registration statement of which this prospectus forms a part; and

- shares of our common stock that will become available for future issuance under the 2020 Employee Stock Purchase Plan upon the effectiveness of the registration statement of which this prospectus forms a part.

New investors will experience further dilution if new options or warrants are issued under our equity incentive plans or we issue additional shares of common stock, other equity securities or convertible debt securities in the future. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

SELECTED CONSOLIDATED FINANCIAL DATA

We have derived the consolidated statement of operations data for the years ended December 31, 2018 and 2019 and the consolidated balance sheet data as of December 31, 2018 and 2019 from our audited consolidated financial statements appearing elsewhere in this prospectus. You should read the following selected consolidated financial data together with our consolidated financial statements and the related notes appearing elsewhere in this prospectus and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this prospectus. The selected consolidated financial data contained in this section are not intended to replace our consolidated financial statements and the related notes. Our historical results are not necessarily indicative of the results that may be expected in any future period.

	YEAR ENDED DECEMBER 31,	
	2018	2019
	(In thousands, except share and per share data)	
Consolidated Statement of Operations Data:		
Operating expenses:		
Research and development	$ 18,820	$ 29,557
General and administrative	3,899	6,232
Total operating expenses	22,719	35,789
Loss from operations	(22,719)	(35,789)
Total other income (expense):		
Interest income (expense), net	(35)	193
Other expense	(3,648)	–
Total other income (expense), net	(3,683)	193
Loss before provision for (benefit from) income taxes	(26,402)	(35,596)
Provision for (benefit from) income taxes	133	(84)
Net loss	$ (26,535)	$ (35,512)
Accretion and cumulative dividends on redeemable convertible preferred stock	(2,296)	(5,170)
Loss on conversion of convertible notes	(392)	–
Net loss attributable to common stockholders	$ (29,223)	$ (40,682)
Net loss per share attributable to common stockholders, basic and diluted(1)	$ (10.52)	$ (12.43)
Weighted average common shares outstanding, basic and diluted(1)	2,776,947	3,273,420
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)(1)		$ (1.25)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)(1)		28,398,898

(1) See Note 13 to our consolidated financial statements appearing elsewhere in this prospectus for details on the calculation of basic and diluted net loss per share attributable to common

stockholders and unaudited pro forma basic and diluted net loss per share attributable to common stockholders.

	AS OF DECEMBER 31,	
	2018	2019
	(In thousands)	
Consolidated Balance Sheet Data:		
Cash and cash equivalents	$ 17,950	$ 44,815
Working capital(1)	$ 13,981	$ 38,678
Total assets	$ 19,829	$ 47,694
Redeemable convertible preferred stock	$ 55,720	$ 121,121
Accumulated deficit	$ (41,365)	$ (81,009)
Total stockholders' deficit	$ (41,038)	$ (81,008)

(1) We define working capital as current assets less current liabilities. See our consolidated financial statements and related notes appearing elsewhere in this prospectus for further details regarding our current assets and current liabilities.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with the "Selected Consolidated Financial Data" section of this prospectus and our consolidated financial statements and related notes appearing elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this prospectus, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a clinical-stage biopharmaceutical company translating genetic insights into the development of therapies for central nervous system, or CNS, disorders characterized by neuronal imbalance. Normal brain function requires a delicate balance of excitation and inhibition in neuronal circuits, which, when dysregulated, leads to abnormal function and disease. We are applying insights into the genetic mutations that drive excitation-inhibition imbalance in diseases to select biological targets for severe pediatric epilepsies and more broadly for prevalent psychiatric diseases and neurologic disorders. We apply a deliberate and pragmatic precision approach, leveraging a suite of translational tools including novel transgenic and predictive translational animal models and electrophysiology markers, to enable an efficient path to proof-of-concept in patients. Through this approach, we have established a broad portfolio, including five disclosed programs across multiple CNS disorders, including depression, epilepsy, movement disorders and pain syndromes, with three clinical-stage product candidates. We intend to develop best-in-class therapies that can deliver long-term benefits to human health by meaningfully impacting patients and society. We expect multiple topline clinical trial readouts from all three programs before and anticipate the launch of a new clinical development program in .

Our most advanced programs, PRAX-114 and PRAX-944, are currently in Phase 2 development. PRAX-114 is being developed for the treatment of major depressive disorder and perimenopausal depression. Together, these conditions affect more than 22 million patients in the United States. PRAX-944 is a selective small molecule inhibitor of T-type calcium channels for the treatment of essential tremor, a progressive and debilitating movement disorder affecting an estimated three million people in the United States. In addition, we have initiated a Phase 1 trial of PRAX-562, a persistent sodium current blocker, for the treatment of a broad range of rare, devastating CNS disorders, such as severe pediatric epilepsy and adult cephalgia. In addition to our clinical programs, we have three disclosed preclinical product candidates in development for severe genetic epilepsies.

We were incorporated in 2015 and commenced operations in 2016. Since inception, we have devoted substantially all of our resources to developing our preclinical and clinical product candidates, building our intellectual property portfolio, business planning, raising capital and providing general and administrative support for these operations. We employ a "virtual" research and development model, relying heavily upon external consultants, collaborators and contract research organizations to conduct our preclinical and clinical activities. Since inception, we have financed our operations primarily with proceeds from the issuance of convertible debt and sales of our Series A redeemable convertible preferred stock, Series B redeemable convertible preferred stock, Series B-1 redeemable convertible preferred stock and Series C redeemable convertible preferred stock.

We are a development stage company and we have not generated any revenue from product sales, and do not expect to do so for several years, if at all. All of our programs are still in preclinical

and clinical development. Our ability to generate product revenue sufficient to achieve profitability will depend heavily on the successful development and eventual commercialization of one or more of our product candidates, if approved. We have incurred recurring operating losses since inception, including net losses of $26.5 million and $35.5 million for the years ended December 31, 2018 and 2019. As of December 31, 2019, we had an accumulated deficit of $81.0 million. We expect to incur significant expenses and operating losses for the foreseeable future as we expand our research and development activities. In addition, our losses from operations may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical trials and our expenditures on other research and development activities. We anticipate that our expenses will increase significantly in connection with our ongoing activities, as we:

- advance our lead product candidates, PRAX-114 and PRAX-944, to late stage clinical trials;
- advance our PRAX-562 product candidate to Phase 2 clinical trials;
- advance our preclinical programs to clinical trials;
- further invest in our pipeline;
- further invest in our manufacturing capabilities;
- seek regulatory approval for our investigational medicines;
- maintain, expand, protect and defend our intellectual property portfolio;
- acquire or in-license technology;
- secure facilities to support continued growth in our research, development and commercialization efforts;
- take temporary precautionary measures to help minimize the risk of COVID-19 to our employees;
- increase our headcount to support our development efforts and to expand our clinical development team; and
- incur additional costs and headcount associated with operating as a public company upon the completion of this offering.

In addition, as we progress toward marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution.

As a result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through the sale of equity, debt financings or other capital sources, including potential collaborations with other companies or other strategic transactions. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all. If we fail to raise capital or enter into such agreements as, and when, needed, we may have to significantly delay, scale back or discontinue the development and commercialization of one or more of our product candidates or delay our pursuit of potential in-licenses or acquisitions.

Because of the numerous risks and uncertainties associated with product development, we are unable to predict the timing or amount of increased expenses or when or if we will be able to achieve or maintain profitability. Even if we are able to generate product sales, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce or terminate our operations.

As of December 31, 2019, we had cash and cash equivalents of $44.8 million. On February 19, 2020 and March 3, 2020, we repurchased 5,825,243 shares of our Series C redeemable convertible preferred stock at the original issuance price of $5.15 per share for an aggregate cash repurchase price of $30.0 million. On April 15, 2020 and May 8, 2020, we completed additional closings for the sale and issuance of an aggregate of 4,563,108 shares of our Series C redeemable convertible preferred stock at $5.15 per share for aggregate cash proceeds of $23.5 million, net of issuance costs. We believe that our existing cash and cash equivalents, after considering the net cash outflow as a result of our repurchase and additional sale and issuance of Series C redeemable convertible preferred stock and the anticipated net proceeds from this offering, will enable us to fund our operating expenses and capital expenditure requirements through . We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. See "—Liquidity and Capital Resources."

Without giving effect to the anticipated net proceeds from this offering, based on our current operating plan, we believe we do not have sufficient cash and cash equivalents on hand to support current operations for at least one year from the date of issuance of the consolidated financial statements appearing elsewhere in this prospectus. We have concluded that this circumstance raises substantial doubt about our ability to continue as a going concern for at least one year from the date that our consolidated financial statements for the year ended December 31, 2019 were issued. See Note 1 to our consolidated financial statements appearing at the end of this prospectus for additional information on our assessment. To finance our operations, we will need to raise additional capital, which cannot be assured. If we are unable to obtain additional funding, we could be forced to delay, reduce or eliminate some or all of our research and development programs, product portfolio expansion or commercialization efforts, which could adversely affect our business prospects, or we may be unable to continue operations. We expect to seek additional funding through private or public equity transactions, debt financings or other capital sources, including collaborations with other companies or other strategic transactions.

COVID-19 Business Update

With the global spread of the ongoing COVID-19 pandemic in 2020, we have implemented business continuity plans designed to address and mitigate the impact of the COVID-19 pandemic on our employees and our business, including our preclinical studies and clinical trials. Our operations are considered an essential business and we are continuing to operate during this period. We have taken measures to secure our research and development activities. While we are experiencing limited financial impacts at this time, given the global economic slowdown, the overall disruption of global healthcare systems and the other risks and uncertainties associated with the pandemic, our business, financial condition and results of operations could be materially adversely affected. We continue to closely monitor the COVID-19 pandemic as we evolve our business continuity plans, clinical development plans and response strategy.

In addition, while we have taken and are continuing to take steps to mitigate against COVID-19 pandemic-related delays, our planned clinical trials may be affected by the COVID-19 pandemic, including (i) delays or difficulties in enrolling and retaining patients in our planned clinical trials, including patients that may not be able or willing to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services; (ii) delays or difficulties in clinical site initiation, including difficulties in recruiting and retaining clinical site investigators and clinical site staff; (iii) diversion or prioritization of healthcare resources away from the conduct of clinical trials and towards the COVID-19 pandemic, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials, and because, who, as healthcare providers, may have heightened exposure to COVID-19 and adversely impact our clinical trial operations; (iv) interruption of our future clinical supply chain or key clinical trial activities, such as clinical trial site monitoring, due to limitations on travel imposed or recommended by federal, state/

provincial or municipal governments, employers and others; and (v) limitations in outsourced third-party resources that would otherwise be focused on the conduct of our planned clinical trials, including because of sickness of third-party personnel or their families, or the desire of third-party personnel to avoid contact with large groups of people.

Financial Operations Overview

Revenue

We have not generated any revenue since inception and do not expect to generate any revenue from the sale of products for several years, if at all. If our development efforts for our current or future product candidates are successful and result in marketing approval or collaboration or license agreements with third parties, we may generate revenue in the future from a combination of product sales or payments from collaboration or license agreements that we may enter into with third parties.

Operating Expenses

Research and Development Expense

The nature of our business and primary focus of our activities generate a significant amount of research and development costs. Research and development expenses represent costs incurred by us for the following:

- costs to develop our portfolio;
- discovery efforts leading to development candidates;
- clinical development costs for our programs; and
- costs to develop our manufacturing technology and infrastructure.

The costs above comprise the following categories:

- personnel-related expenses, including salaries, benefits and stock-based compensation expense;
- expenses incurred under agreements with third parties, such as consultants, investigative sites and contract research organizations, or CROs, that conduct our preclinical and clinical studies and in-licensing arrangements;
- costs incurred to maintain compliance with regulatory requirements;
- costs incurred with third-party contract manufacturing organizations, or CMOs, to acquire, develop and manufacture materials for preclinical and clinical studies; and
- depreciation, amortization and other direct and allocated expenses, including rent, insurance and other operating costs, incurred as a result of our research and development activities.

We expense research and development costs as incurred. We recognize external development costs based on an evaluation of the progress to completion of specific tasks using information provided to us by our vendors and our clinical investigative sites. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and are reflected in our consolidated balance sheets as prepaid expenses or accrued research and development expenses. Non-refundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized, even when there is no alternative future use for the research and development. The capitalized amounts are expensed as the related goods are delivered or the services are performed.

A significant portion of our research and development costs have been external costs. We track direct external research and development expenses to specific programs upon commencement. Due to

the number of ongoing programs and our ability to use resources across several projects, indirect or shared operating costs incurred for our research and development programs, such as personnel, facility costs and certain consulting costs, are not recorded or maintained on a program-specific basis.

Our major programs, PRAX-114, PRAX-944 and PRAX-562, are those for which we have initiated clinical activities. Our discovery-stage programs are those which are at an earlier point in the development process. The following table reflects our research and development expenses, including direct program-specific expenses summarized by major program, discovery-stage program costs and indirect or shared operating costs recognized as research and development expenses during each period presented (in thousands):

	Year Ended December 31,	
	2018	2019
PRAX-114	$ 4,795	$ 7,192
PRAX-944	2,286	4,035
PRAX-562	4,469	4,276
Discovery-stage programs	1,954	5,909
Personnel-related (including stock-based compensation)	2,337	5,398
Other indirect research and development expenses	2,979	2,747
Total research and development expenses	$18,820	$29,557

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect that our research and development expenses will continue to increase in the foreseeable future as we advance our product candidates through the development phase, and as we continue to discover and develop additional product candidates, build manufacturing capabilities and expand into additional therapeutic areas.

At this time, we cannot reasonably estimate or know the nature, timing and estimated costs of the efforts that will be necessary to complete the development of, and obtain regulatory approval for, any of our product candidates. We are also unable to predict when, if ever, material net cash inflows will commence from sales or licensing of our product candidates. This is due to the numerous risks and uncertainties associated with drug development, including the uncertainty of:

- our ability to add and retain key research and development personnel;
- the timing and progress of preclinical and clinical development activities;
- the number and scope of preclinical and clinical programs we decide to pursue;
- our ability to successfully complete clinical trials with safety, tolerability and efficacy profiles that are satisfactory to the FDA or any comparable foreign regulatory authority;
- our ability to successfully develop, obtain regulatory approval for, and then successfully commercialize, our product candidates;
- our successful enrollment in and completion of clinical trials;
- the costs associated with the development of any additional product candidates we identify in-house or acquire through collaborations;
- our ability to discover, develop and utilize biomarkers to demonstrate target engagement, pathway engagement and the impact on disease progression of our product candidates;

- our ability to establish and maintain agreements with third-party manufacturers for clinical supply for our clinical trials and commercial manufacturing, if our product candidates are approved;
- the terms and timing of any collaboration, license or other arrangement, including the terms and timing of any milestone payments thereunder;
- our ability to obtain and maintain patent, trade secret and other intellectual property protection and regulatory exclusivity for our product candidates if and when approved;
- our receipt of marketing approvals from applicable regulatory authorities;
- our ability to commercialize products, if and when approved, whether alone or in collaboration with others; and
- the continued acceptable safety profiles of the product candidates following approval.

A change in any of these variables with respect to the development of any of our product candidates would significantly change the costs, timing and viability associated with the development of that product candidate. For example, if the FDA or another regulatory authority were to delay our planned start of clinical trials or require us to conduct clinical trials or other testing beyond those that we currently expect, or if we experience significant delays in enrollment in any of our planned clinical trials, we could be required to expend significant additional financial resources and time to complete our clinical development activities. We may never obtain regulatory approval for any of our product candidates. Drug commercialization will take several years and millions of dollars in development costs.

General and Administrative Expense

General and administrative expenses consist primarily of personnel-related costs, including salaries, benefits and stock-based compensation, for personnel in our executive, finance, legal, business development and administrative functions. General and administrative expenses also include legal fees relating to corporate matters; professional fees for accounting, auditing, tax and administrative consulting services; insurance costs; administrative travel expenses; and facility-related expenses, which include direct depreciation costs and allocated expenses for office rent and other operating costs. These costs relate to the operation of the business, unrelated to the research and development function, or any individual program. Costs to secure and defend our IP are expensed as incurred and are classified as general and administrative expenses.

We anticipate that our general and administrative expenses will increase in the future as we increase our headcount to support the expected growth in our research and development activities and the potential commercialization of our product candidates. We also expect to incur increased expenses associated with being a public company, including increased costs of accounting, audit, legal, regulatory and tax-related services associated with maintaining compliance with exchange listing and SEC requirements, director and officer insurance costs and investor and public relations costs. We also expect to incur additional IP-related expenses as we file patent applications to protect innovations arising from our research and development activities.

Total Other Income (Expense)

Interest Income

Interest income consists of interest earned on our cash and cash equivalents.

Interest Expense

Interest expense consists of interest incurred on our convertible promissory notes.

Other Expense

Other expense consists of fluctuations in the fair value of financial instruments that were measured at fair value, including our Series B redeemable convertible preferred stock tranche obligation, an anti-

dilution obligation related to our license agreement with Purdue Neuroscience Company, and conversion features associated with our convertible notes. All of these financial instruments were settled during the year ended December 31, 2018.

Income Taxes

Since our inception, we have not recorded any U.S. federal or state income tax benefits for the net losses we have incurred in each year or for our earned research and development tax credits, due to our uncertainty of realizing a benefit from those items. As of December 31, 2018 and 2019, we had U.S. federal and state net operating loss carryforwards which may be available to offset future taxable income and which would begin to expire in 2035. As of December 31, 2018 and 2019, we also had federal and state research and development tax credit carryforwards which may be available to offset future income tax liabilities and which would begin to expire in 2031.

Income taxes are determined at the applicable tax rates adjusted for non-deductible expenses, research and development tax credits and other permanent differences. Our income tax provision may be significantly affected by changes to our estimates. The income tax provision and benefit recognized for the years ended December 31, 2018 and 2019, respectively, related to income tax associated with our operations in Australia.

Results of Operations

Comparison of the Years Ended December 31, 2018 and 2019

The following table summarizes our consolidated statements of operations for each period presented (in thousands):

	Year Ended December 31,		Change
	2018	2019	
Operating expenses:			
Research and development	$ 18,820	$ 29,557	$ 10,737
General and administrative	3,899	6,232	2,333
Total operating expenses	22,719	35,789	13,070
Loss from operations	(22,719)	(35,789)	(13,070)
Total other income (expense):			
Interest income	92	193	101
Interest expense	(127)	–	127
Other expense	(3,648)	–	3,648
Total other income (expense), net	(3,683)	193	3,876
Loss before provision for (benefit from) income taxes	(26,402)	(35,596)	(9,194)
Provision for (benefit from) income taxes	133	(84)	(217)
Net loss	$(26,535)	$(35,512)	$ (8,977)

Research and Development Expense

The following table summarizes our research and development expenses for each period presented, along with the changes in those items (in thousands):

	Year Ended December 31,		Change
	2018	2019	
PRAX-114	$ 4,795	$ 7,192	$ 2,397
PRAX-944	2,286	4,035	1,749
PRAX-562	4,469	4,276	(193)
Discovery-stage programs	1,954	5,909	3,955
Personnel-related (including stock-based compensation)	2,337	5,398	3,061
Other indirect research and development expenses	2,979	2,747	(232)
Total research and development expenses	$18,820	$29,557	$10,737

Research and development expenses increased $10.7 million from $18.8 million for the year ended December 31, 2018, to $29.6 million for the year ended December 31, 2019. The increase in research and development expenses was primarily attributable to the following:

- $4.0 million increase in discovery-stage program expense, primarily for our PRAX-222 program which commenced during the year ended December 31, 2019 and incurred $4.3 million of research and development expense, including $2.2 million upon our acquisition of the underlying in-process research and development assets in September 2019 and $0.6 million of an up-front payment and research activity reimbursements under a collaboration agreement for that program;
- $3.1 million increase in personnel-related costs due to increased headcount;
- $2.4 million increase in expense related to our PRAX-114 program, including a $2.1 million increase in outsourced research and development spend and a $0.3 million increase in consulting costs, as we started enrolling patients in a Phase 2a clinical trial during the year ended December 31, 2019;
- $1.7 million increase in expense related to our PRAX-944 program, driven by a $1.5 million increase in outsourced research and development and CRO spend and a $0.2 million increase in consulting costs, as the program progressed into a Phase 2a clinical trial during the year ended December 31, 2019;
- $0.2 million offsetting decrease in other indirect research and development expenses, driven by a $0.9 million decrease in outsourced research and development and CRO spend as well as consulting costs not allocated to a specific program, offset by a $0.7 million increase in facility, office, software and other overhead costs due to increased research and development headcount; and
- $0.2 million offsetting decrease in expense related to our PRAX-562 program, primarily driven by the timing of our outsourced research and development activities.

General and Administrative Expense

General and administrative expenses increased $2.3 million from $3.9 million for the year ended December 31, 2018 to $6.2 million for the year ended December 31, 2019. The increase in general and administrative expenses was primarily attributable to the following:

- $1.5 million increase in personnel-related costs driven by increased headcount;

- $0.7 million increase in professional fees including legal and consulting services, driven by a $0.4 million increase in legal fees, primarily related to intellectual property filings, as we expand our research and development activities, and a $0.3 million increase in consulting costs, primarily in the accounting and business development functions; and
- $0.1 million increase in facilities, office and other general and administrative expenses to support the increase in our operating activities.

Total Other Income (Expense), Net

Total other income (expense), net for the year ended December 31, 2018 was $(3.7) million, compared to $0.2 million for the year ended December 31, 2019. The change was primarily attributable to a $3.6 million loss recognized during the year ended December 31, 2018 as a result of fluctuations in the fair value of financial instruments that were measured at fair value, including our Series B redeemable convertible preferred stock tranche obligation, an anti-dilution obligation related to our license agreement with Purdue Neuroscience Company and conversion features associated with our convertible notes. All of these financial instruments were settled during the year ended December 31, 2018.

Liquidity and Capital Resources

Sources of Liquidity

Since our inception, we have incurred significant losses in each period. We have not yet commercialized any of our product candidates, which are in various phases of preclinical and clinical development, and we do not expect to generate revenue from sales of any products for several years, if at all. To date, we have financed our operations primarily with proceeds from sales of our redeemable convertible preferred stock and the issuance of convertible debt.

In 2015 and 2016, we raised $1.0 million from the issuance of convertible promissory notes. In October 2016, April 2017 and July 2017, we raised an aggregate of $6.1 million from the sale of our Series A redeemable convertible preferred stock, net of issuance costs. In December 2017 and January 2018, we raised an aggregate of $3.0 million from the issuance of convertible promissory notes. In March and October 2018, we raised an aggregate of $36.8 million from the sale of our Series B redeemable convertible preferred stock, net of issuance costs. In June 2019, we raised $9.9 million from the sale of our Series B-1 redeemable convertible preferred stock, net of issuance costs. In November and December 2019, we raised an aggregate of $50.3 million from the sale of our Series C redeemable convertible preferred stock.

As of December 31, 2019, we had cash and cash equivalents of $44.8 million. On February 19, 2020 and March 3, 2020, we repurchased 5,825,243 shares of our Series C redeemable convertible preferred stock at the original issuance price of $5.15 per share for an aggregate cash repurchase price of $30.0 million. On April 15, 2020 and May 8, 2020, we completed additional closings for the sale and issuance of an aggregate of 4,563,108 shares of our Series C redeemable convertible preferred stock at $5.15 per share for aggregate cash proceeds of $23.5 million, net of issuance costs.

Historical Cash Flows

The following table provides information regarding our cash flows for each period presented (in thousands):

	Year Ended December 31,	
	2018	2019
Net cash provided by (used in):		
Operating activities	$(20,721)	$(33,420)
Investing activities	(63)	(103)
Financing activities	37,804	60,388
Net increase in cash, cash equivalents and restricted cash	$ 17,020	$ 26,865

Operating Activities

Our cash flows from operating activities are greatly influenced by our use of cash for operating expenses and working capital requirements to support the business. We have historically experienced negative cash flows from operating activities as we invested in developing our portfolio, drug discovery efforts and related infrastructure. The cash used in operating activities resulted primarily from our net losses adjusted for non-cash charges and changes in components of working capital, which are primarily the result of increased expenses and timing of vendor payments.

During the year ended December 31, 2018, net cash used in operating activities of $20.7 million was primarily due to our $26.5 million net loss, partially offset by $4.4 million of non-cash charges and $1.4 million in changes in operating assets and liabilities.

During the year ended December 31, 2019, net cash used in operating activities of $33.4 million was primarily due to our $35.5 million net loss, partially offset by $1.3 million of non-cash charges and $0.7 million in changes in operating assets and liabilities.

Investing Activities

During the years ended December 31, 2018 and 2019, net cash used in investing activities related to the purchase of property and equipment.

Financing Activities

During the years ended December 31, 2018 and 2019, net cash provided by investing activities was $37.8 million and $60.4 million, respectively, consisting of net proceeds from the issuance of our Series B redeemable convertible preferred stock and proceeds from the issuance of a convertible note during the year ended December 31, 2018, and net proceeds from the issuance of our Series B-1 redeemable convertible preferred stock and our Series C redeemable convertible preferred stock during the year ended December 31, 2019.

Plan of Operation and Future Funding Requirements

We expect our expenses to increase substantially in connection with our ongoing research and development activities, particularly as we advance the preclinical activities and clinical trials of our product candidates. In addition, upon the completion of this offering, we expect to incur additional costs associated with operating as a public company. As a result, we expect to incur substantial operating losses and negative operating cash flows for the foreseeable future. We anticipate that our expenses will increase substantially if and as we:

- advance the clinical development of our PRAX-114, PRAX-944 and PRAX-562 product candidates;

- advance the development of any additional product candidates;
- conduct research and continue preclinical development of potential product candidates;
- make strategic investments in manufacturing capabilities;
- maintain our current intellectual property portfolio and opportunistically acquire complementary intellectual property;
- seek to obtain regulatory approvals for our product candidates;
- potentially establish a sales, marketing and distribution infrastructure and scale-up manufacturing capabilities to commercialize any products for which we may obtain regulatory approval;
- add clinical, scientific, operational, financial and management information systems and personnel, including personnel to support our product development and potential future commercialization efforts and to support our transition to a public company; and
- experience any delays or encounter any issues with any of the above, including but not limited to failed studies, complex results, safety issues or other regulatory challenges.

As of December 31, 2019, we had cash and cash equivalents of $44.8 million. On February 19, 2020 and March 3, 2020, we repurchased 5,825,243 shares of our Series C redeemable convertible preferred stock at the original issuance price of $5.15 per share for an aggregate cash repurchase price of $30.0 million. On April 15, 2020 and May 8, 2020, we completed additional closings for the sale and issuance of an aggregate of 4,563,108 shares of our Series C redeemable convertible preferred stock at $5.15 per share for aggregate cash proceeds of $23.5 million, net of issuance costs. Based on our current operating plan, we believe that our existing cash and cash equivalents, after considering the net cash outflow as a result of our repurchase and additional sale and issuance of our Series C redeemable convertible preferred stock and the anticipated net proceeds from this offering, will enable us to fund our operating expenses and capital expenditure requirements through . However, we have based this estimate on assumptions that may prove to be wrong and we could exhaust our capital resources sooner than we expect.

We are unable to estimate the exact amount of our working capital requirements, but based on our available cash resources, we do not expect to have sufficient cash and cash equivalents on hand to support current operations for at least one year from the date of issuance of the consolidated financial statements appearing elsewhere in this prospectus. This circumstance raises substantial doubt about our ability to continue as a going concern for at least one year from the date that our consolidated financial statements for the year ended December 31, 2019 appearing at the end of this prospectus were issued. We will need to raise additional capital in this offering and/or otherwise to fund our future operations and remain as a going concern. However, we cannot guarantee that we will be able to obtain sufficient additional funding in this offering or otherwise or that such funding, if available, will be obtainable on terms satisfactory to us. In the event that we are unable to obtain sufficient additional funding, there can be no assurance that we will be able to continue as a going concern.

Because of the numerous risks and uncertainties associated with product development, and because the extent to which we may enter into collaborations with third parties for the development of our product candidates is unknown, we may incorrectly estimate the timing and amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates. Our funding requirements and timing and amount of our operating expenditures will depend on many factors, including, but not limited to:

- the scope, progress, results and costs of preclinical studies and clinical trials for our programs and product candidates;

- the number and characteristics of programs and technologies that we develop or may in-license;
- the costs and timing of future commercialization activities, including manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the costs necessary to obtain regulatory approvals, if any, for products in the United States and other jurisdictions, and the costs of post-marketing studies that could be required by regulatory authorities in jurisdictions where approval is obtained;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims;
- the continuation of our existing licensing arrangements and entry into new collaborations and licensing arrangements;
- the costs we incur in maintaining business operations;
- the costs associated with being a public company;
- the revenue, if any, received from commercial sales of any product candidates for which we receive marketing approval;
- the effect of competing technological and market developments;
- the impact of any business interruptions to our operations or to those of our manufacturers, suppliers or other vendors resulting from the COVID-19 pandemic or similar public health crisis; and
- the extent to which we acquire or invest in businesses, products and technologies, including entering into licensing or collaboration arrangements for product candidates, although we currently have no commitments or agreements to complete any such acquisitions or investments in businesses.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of products that we do not expect to be commercially available for many years, if ever. Accordingly, we will need to obtain substantial additional funds to achieve our business objectives.

Adequate additional funds may not be available to us on acceptable terms, or at all. We do not currently have any committed external source of funds. Market volatility resulting from the COVID-19 pandemic or other factors could also adversely impact our ability to access capital as and when needed. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Additional debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends and may require the issuance of warrants, which could potentially dilute your ownership interest.

If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit or terminate our product development programs or any

future commercialization efforts or grant rights to develop and market product candidates to third parties that we would otherwise prefer to develop and market ourselves.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations as of December 31, 2019 and the effects that such obligations are expected to have on our liquidity and cash flows in future periods (in thousands):

	Payments Due by Period				
	Total	Less Than 1 Year	1 to 3 Years	3 to 5 Years	More Than 5 Years
Operating lease commitments(1)	$1,574	$ 783	$791	$ —	$ —
Total	$1,574	$ 783	$791	$ —	$ —

(1) We sublease building space in Cambridge, Massachusetts. Our sublease will expire on December 30, 2021. The amounts in the table above represent the fixed contractual lease obligations. Please refer to Note 8 to our consolidated financial statements appearing elsewhere in this prospectus.

We have collaboration and license agreements with Purdue Neuroscience Company, or Purdue, RogCon Inc., or RogCon, and Ionis Pharmaceuticals, Inc., or Ionis, under which we could be obligated to pay certain fees, milestone payments and cost reimbursements.

Under our license agreement with Purdue, we are obligated to make future milestone payments of up to $33.0 million based on the achievement of specified development and sales milestones. Furthermore, we will pay Purdue royalties of a low-single-digit percentage of annual net sales of licensed products. Either party may terminate the license agreement for convenience or in the event of a material breach by the other party and failure to cure such breach within a certain period of time. If the agreement is voluntarily terminated by Purdue, the Company's license rights will survive such termination and such rights will become fully paid, perpetual and irrevocable. As the agreement may be terminated for convenience, the payments are not included in the table above. See "Business—License Agreements—License Agreement with Purdue."

Under our license agreement with RogCon, we will reimburse RogCon for its out-of-pocket costs incurred for activities performed under the license agreement. Additionally, we may pay RogCon a milestone payment of $3.0 million and profit share payments. The $3.0 million milestone payment will become due when the first profit share payment has become due and certain contingent payments have become payable to Ionis under our collaboration agreement with Ionis. The profit share payments will be based on a low-double-digit percentage of net profits, depending on sales volume. Either party may terminate the license agreement for material breach or insolvency of the other party. Additionally, we may terminate for convenience with prior notice to RogCon. As such, we do not include variable and contingent payments under our agreement with RogCon in the table above as they are not fixed and estimable. See "Business—License Agreements—License Agreement with RogCon."

Under our collaboration agreement with Ionis, we are obligated to reimburse any out-of-pocket costs incurred by Ionis related to research activities, identification of a development candidate and conducting an IND-enabling toxicology study. We also have an exclusive option to obtain the rights and license related to the development candidate following the completion of the IND-enabling toxicology study. If we exercise our development candidate option, we may be required to make additional payments to Ionis including a license fee, development milestone payments, additional milestone

payments and sales fees or sublicense fees. However, we are not obligated to exercise our development candidate option and are able to terminate our collaboration agreement with Ionis for convenience. Either party may terminate the collaboration agreement upon material breach or insolvency of the other party or if Ionis is unable to identify a development candidate. Ionis may terminate if we fail to achieve a performance milestone. As such, payments due pursuant to the exercise of our development candidate option are contingent and therefore excluded from the table above as they are not fixed and estimable. See "Business—License Agreements—Ionis Collaboration Agreement."

We have agreements with certain vendors for various services, including services related to clinical operations and support, for which we are not contractually able to terminate for convenience and avoid any and all future obligations to the vendors. Under such agreements, we are contractually obligated to make certain payments to vendors to reimburse them for their unrecoverable outlays incurred prior to cancellation. The exact amounts of such obligations are dependent on the timing of termination and the exact terms of the relevant agreement and cannot be reasonably estimated. We do not include these payments in the table above as they are not fixed and estimable.

In addition, we enter into indemnification agreements and agreements containing indemnification provisions in the ordinary course of business. Pursuant to these agreements, we agree to indemnify, hold harmless and reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally our business partners, in connection with any U.S. patent or any copyright or other intellectual property infringement claim by any third party with respect to our products. The term of these indemnification agreements is generally perpetual upon execution of the agreement. The maximum potential amount of future payments we could be required to make under these indemnification agreements cannot be reasonably estimated and therefore is not included in the table above.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the SEC.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States, or GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in the notes to our consolidated financial statements appearing elsewhere in this prospectus, we believe the following accounting policies used in the preparation of our consolidated financial statements require the most significant judgments and estimates.

Fair Value Measurements

Series B Preferred Stock Tranche Obligation

We determined that our obligation to issue additional shares of our Series B redeemable convertible preferred stock upon the occurrence of a specified clinical milestone event represented a

freestanding financial instrument. The resulting tranche liability was initially recorded at fair value, with gains and losses arising from changes in fair value recognized in other income (expense) in the consolidated statements of operations and comprehensive loss. The tranche liability was remeasured at each reporting period and upon the settlement of the obligation. The tranche liability was valued using a binomial model with significant inputs including the estimated future value of our Series B redeemable convertible preferred stock, the discount rate, estimated time from the initial closing of our Series B redeemable convertible preferred stock to the tranche closing, and probability of the tranche closing. The obligation was fully satisfied in October 2018 upon the second closing of our Series B redeemable convertible preferred stock, upon which the tranche liability was remeasured and reclassified to Series B redeemable convertible preferred stock.

Anti-Dilution Obligation

We concluded that our obligation to issue additional shares of our redeemable convertible preferred stock to Purdue to maintain a specified ownership percentage in our capital stock through issuances of our Series B redeemable convertible preferred stock represented a freestanding financial instrument. The resulting anti-dilution obligation was initially recorded at fair value, with gains and losses arising from changes in fair value recognized in other income (expense) in the consolidated statements of operations and comprehensive loss. The anti-dilution obligation was remeasured at each reporting period and upon the settlement of the obligation. The anti-dilution obligation was valued using a discounted cash flow model under the income approach, using significant inputs including the estimated future value of our Series B redeemable convertible preferred stock, discount rates, estimated time to liquidity and probability of each tranche closing. The anti-dilution obligation was settled in October 2018, upon which it was remeasured and reclassified to Series B redeemable convertible preferred stock.

Conversion Features

We issued two separate unsecured convertible promissory notes to an investor in 2017 and 2018 that would automatically convert, upon an equity financing of at least $2.0 million in gross proceeds, into shares of the type of equity securities issued in such financing, at a discount. We determined that the conversion features represented a derivative instrument which was initially recorded at fair value, with gains and losses arising from changes in fair value recognized in other income (expense) in the consolidated statements of operations and comprehensive loss. The conversion features were remeasured at each reporting period and upon settlement. The fair value of the conversion features was determined by calculating the fair values of the convertible promissory notes with and without the conversion features. The difference between the fair values of the convertible promissory notes in the “with” and “without” scenarios was determined to be the initial fair value of the conversion features. The valuation used significant inputs, including the probability of various exit scenarios and discount rates. The conversion features were settled, and the notes converted into shares of Series B redeemable convertible preferred stock, upon the initial closing of our Series B redeemable convertible preferred stock in March 2018.

Research and Development Expenses and Related Accruals

Research and development expenses include costs directly attributable to the conduct of research and development programs, including personnel-related expenses such as salaries, benefits, and stock-based compensation expense; materials; supplies; manufacturing and external costs related to outside vendors engaged to conduct both preclinical studies and clinical trials; and the allocable portions of facility costs, such as rent, utilities, depreciation, and general support services. All costs associated with research and development activities are expensed as incurred.

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued research and development expenses. This process involves reviewing open

contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf, and estimating the level of service performed and the associated costs incurred for the services when we have not yet been invoiced or otherwise notified of the actual costs. The majority of our service providers invoice us in arrears for services performed, on a pre-determined schedule or when contractual milestones are met; however, some require advance payments. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at that time. When evaluating the adequacy of the accrued liabilities, we analyze progress of the studies or trials, including the phase or completion of events, invoices received and contracted costs. Examples of estimated accrued research and development expenses include fees paid to:

- CROs in connection with performing research services and preclinical and clinical studies;
- investigative sites or other providers in connection with preclinical and clinical studies;
- vendors in connection with preclinical and clinical development activities; and
- vendors related to product manufacturing, development and distribution of preclinical and clinical supplies.

The financial terms of our agreements with CROs are subject to negotiation, vary from contract to contract, and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the clinical expense. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of milestones. In accruing service fees, we estimate the time period over which services will be performed, enrollment of patients, number of sites activated and the level of effort expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or amount of prepaid expense accordingly. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in us reporting amounts that are too high or too low in any particular period.

Stock-Based Compensation

We issue stock-based awards to employees and non-employees, generally in the form of stock options and restricted stock awards. We measure all stock-based awards granted to employees and non-employees as stock-based compensation expense at fair value in accordance with FASB ASC Topic 718, Compensation—Stock Compensation, or ASC 718.

For stock-based awards issued to employees, non-employees and members of the board of directors, or the Board, for their services on the Board, we measure the estimated fair value of the stock-based award on the date of the grant. We recognize compensation expense for those awards granted to employees and members of the Board over the requisite service period, which is generally the vesting period of the respective award. For non-employee awards, compensation expense is recognized as the services are provided, which is generally ratably over the vesting period. We issue stock-based awards with service-based vesting conditions and record the expense for these awards on a straight-line basis over the vesting period. To date, we have not issued any stock-based awards with performance or market-based vesting conditions. We account for forfeitures as they occur.

We classify stock-based compensation expense in our consolidated statements of operations and comprehensive loss in the same manner in which the award recipient’s salary or service payments are classified.

Fair Value of Stock-Based Awards

We determine the fair value of restricted stock based on the fair value of our common stock less purchase price. We estimate the fair value of our stock options using the Black-Scholes option pricing model, which requires inputs of subjective assumptions, including: (i) the expected volatility of our stock; (ii) the expected term of the award; (iii) the risk-free interest rate; (iv) expected dividends; and (v) the fair value of common stock. Due to the lack of company-specific historical and implied volatility data for our common stock, we determine the volatility for awards granted based on an analysis of reported data for a group of guideline publicly-traded companies that issued options with substantially similar terms. For this analysis, we select companies with comparable characteristics to ours including enterprise value, risk profiles and with historical share price information sufficient to meet the expected life of the stock-based awards. We determine expected volatility using a weighted average of the historical volatilities of the guideline group of companies. We will continue to apply this process until such a time as we have adequate historical data regarding the volatility of our own traded stock price. As permitted under ASC 718, we have elected to use the contractual term as the expected term for certain non-employee awards, on an award-by-award basis. For all other awards, we determined the expected term utilizing the "simplified" method whereby the expected term equals the average of the vesting term and the original contractual term of the option, on a weighted basis based on the vesting of each tranche. We utilize this method as we have insufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. For the determination of the risk-free interest rate, we utilize the U.S. Treasury yield curve for instruments in effect at the time of measurement with a term commensurate with the expected term assumption. The expected dividend yield is assumed to be zero as we have never paid dividends, and do not have current plans to pay any dividends on our common stock.

Determination of Fair Value of Common Stock

Given the absence of an active market for our common stock, the fair value of shares of common stock underlying our stock-based awards was determined on each grant date by the Board with input from management, considering our most recently available third-party valuations of common stock and the Board's assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the grant date. Historically, these independent third-party valuations of our equity instruments were performed contemporaneously with identified value inflection points. The third-party valuations were prepared in accordance with the framework of the American Institute of Certified Public Accountants' Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, or the Practice Aid. The Practice Aid identifies various available methods for allocating enterprise value across classes and series of capital stock to determine the estimated fair value of common stock at each valuation date.

In addition to considering the results of these third-party valuations, our Board considered various objective and subjective factors to determine the fair value of our equity instruments as of each grant date, which may be later than the most recently available third-party valuation date, including:

- the lack of liquidity of our equity as a private company;
- the prices of our redeemable convertible preferred stock sold to outside investors in arm's length transactions, and the rights, preferences and privileges of our redeemable convertible preferred stock as compared to those of our common stock, including the liquidation preferences of our redeemable convertible preferred stock;
- the progress of our research and development efforts, including the status of preclinical and clinical studies for our product candidates;
- our stage of development and business strategy and the material risks related to our business and industry;

- the achievement of enterprise milestones, including entering into strategic collaborative and license agreements;
- the valuation of publicly-traded companies in the life sciences and biotechnology sectors, as well as recently completed mergers and acquisitions of peer companies;
- any external market conditions affecting the biotechnology industry and trends within the biotechnology industry;
- the likelihood of achieving a liquidity event, such as an initial public offering, or a sale of our company, given prevailing market conditions; and
- the analysis of initial public offerings and the market performance of similar companies in the biotechnology industry.

There are significant judgments and estimates inherent in these valuations. These judgments and estimates include assumptions regarding our future operating performance, the stage of development of our product candidates, the timing and probability of a potential initial public offering or other liquidity event and the determination of the appropriate valuation methodology at each valuation date. The assumptions underlying these valuations represent management's best estimates, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different.

Once a public trading market for our common stock has been established in connection with the consummation of this offering, it will no longer be necessary for our Board to estimate the fair value of our common stock in connection with our accounting for granted stock options and restricted stock, as the fair value of our common stock will be determined based on its trading price on The Nasdaq Global Market.

Valuation Methodologies

The option-pricing method, or OPM, treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceed the value of the liquidation preferences at the time of a liquidity event, such as a strategic sale or merger. The OPM uses the Black-Scholes option-pricing model to price the call options. Inputs to the model include the anticipated timing of a potential liquidity event and the estimated volatility of the equity securities.

Under the probability-weighted expected return method, or PWERM, the fair value of common stock is estimated based upon an analysis of future values for the company, assuming various outcomes. The common stock value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of stock. Present value is calculated using an appropriate risk-adjusted discount rate.

The hybrid method is a PWERM where the equity value in one of the scenarios is calculated using an OPM.

Third-party appraisals of our common stock were prepared as of March 13, 2018, June 24, 2019 and May 1, 2020. In each appraisal, the value of our equity was calibrated to a contemporaneous transaction in our redeemable convertible preferred stock. For the March 13, 2018 and June 24, 2019 appraisals, the OPM was used to back-solve to the most recent transaction in our preferred shares. For the May 1, 2020 appraisal, the back-solve calculation used a hybrid PWERM. The hybrid PWERM considered three scenarios: an "early" IPO completed in 2020, a "late" IPO completed in 2021 and a

"remain private" scenario in which value is allocated using the OPM. An incremental discount for lack of marketability, or DLOM, is applied to the values of the common stock. The DLOM is estimated using a put option model which considers the expected time to liquidity and the volatility of the common shares.

These appraisals resulted in valuations of our common stock of $1.06 per share as of March 13, 2018, $1.54 per share as of June 24, 2019 and $2.61 as of May 1, 2020.

Grants of Stock-Based Awards

The following table summarizes by grant date and type of award, the number of stock-based awards granted between January 1, 2018 and the date of this prospectus, the per share exercise price, the fair value of common stock on each grant date and the per share estimated fair value of the awards, along with the fair value per award on the date of grant:

Grant Date	Type of Award	Number of Shares	Exercise Price per Share(1)	Fair Value of Common Stock per Share on Grant Date(1)	Weighted-Average Estimated Fair Value Per Share of Awards(2)
October 19, 2018	Options	2,414,618	$ 1.06	$ 1.06	$ 0.77
September 24, 2019	Options	946,394	$ 1.54	$ 1.54	$ 1.05
June 5, 2020	Options	3,602,230	$ 2.61	$ 2.61	$ 1.79

(1) The exercise price per share and fair value of common stock per share represents the fair value of our common stock on the date of grant, as determined by the Board, after taking into account our most recently available contemporaneous valuation of our common stock as well as additional objective and subjective factors through the date of grant.

(2) Reflects the weighted-average fair value of options granted on each grant date, determined using the Black-Scholes option-pricing model.

We did not grant any shares of restricted common stock during this period.

JOBS Act and Emerging Growth Company Status

In April 2012, the JOBS Act was enacted. As an emerging growth company, or EGC, under the JOBS Act, we may delay the adoption of certain accounting standards until such time as those standards apply to private companies. Other exemptions and reduced reporting requirements under the JOBS Act for EGCs include presentation of only two years of audited financial statements in a registration statement for an initial public offering, an exemption from the requirement to provide an auditor's report on internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002, an exemption from any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation and less extensive disclosure about our executive compensation arrangements. Additionally, the JOBS Act provides that an EGC can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an EGC to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of the extended transition period and, therefore, while we are an EGC we will not be subject to new or revised accounting standards at the same time that they become applicable to other public companies that are not EGCs, unless we choose to early adopt a new or revised accounting standard.

We will remain classified as an EGC until the earlier of: (i) the last day of our first fiscal year in which we have total annual gross revenues of $1.07 billion or more, (ii) the last day of the fiscal year

following the fifth anniversary of completion of this offering, (iii) the date on which we have issued more than $1.0 billion of non-convertible debt instruments during the previous three fiscal years or (iv) the date on which we are deemed a “large accelerated filer” under the rules of the SEC.

Recently Issued Accounting Pronouncements

We have reviewed all recently issued standards and have determined that, other than as disclosed in Note 2 to our consolidated financial statements appearing elsewhere in this prospectus, such standards will not have a material impact on our financial statements or do not otherwise apply to our current operations.

Quantitative and Qualitative Disclosures About Market Risks

Interest Rate Fluctuation Risk

We are exposed to market risk related to changes in interest rates. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our cash equivalents are invested in short-term U.S. Treasury obligations. However, because of the short-term nature of the instruments in our portfolio, an immediate change in market interest rates of 100 basis points would not have a material impact on the fair market value of our investment portfolio or on our financial position or results of operations.

Foreign Currency Fluctuation Risk

We are not currently exposed to significant market risk related to changes in foreign currency exchange rates; however, we have contracted with and may continue to contract with foreign vendors. Our operations may be subject to fluctuations in foreign currency exchange rates in the future.

Inflation Fluctuation Risk

Inflation generally affects us by increasing our cost of labor. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the years ended December 31, 2018 or 2019.

BUSINESS

Company Overview

We are a clinical-stage biopharmaceutical company translating genetic insights into the development of therapies for central nervous system, or CNS, disorders characterized by neuronal imbalance. Normal brain function requires a delicate balance of excitation and inhibition in neuronal circuits, which, when dysregulated, can lead to abnormal function and disease. We are applying insights into the genetic mutations that drive excitation-inhibition imbalance in diseases to select biological targets for severe pediatric epilepsies and more broadly for prevalent psychiatric diseases and neurologic disorders. We apply a deliberate and pragmatic precision approach, leveraging a suite of translational tools including novel transgenic and predictive translational animal models and electrophysiology markers, to enable an efficient path to proof-of-concept in patients. Through this approach, we have established a broad portfolio, including five disclosed programs across multiple CNS disorders, including depression, epilepsy, movement disorders and pain syndromes, with three clinical-stage product candidates. We expect multiple topline clinical trial readouts from all three programs before and anticipate the launch of a new clinical development program in . We intend to develop best-in-class therapies that can deliver long-term benefits to human health by meaningfully impacting patients and society.

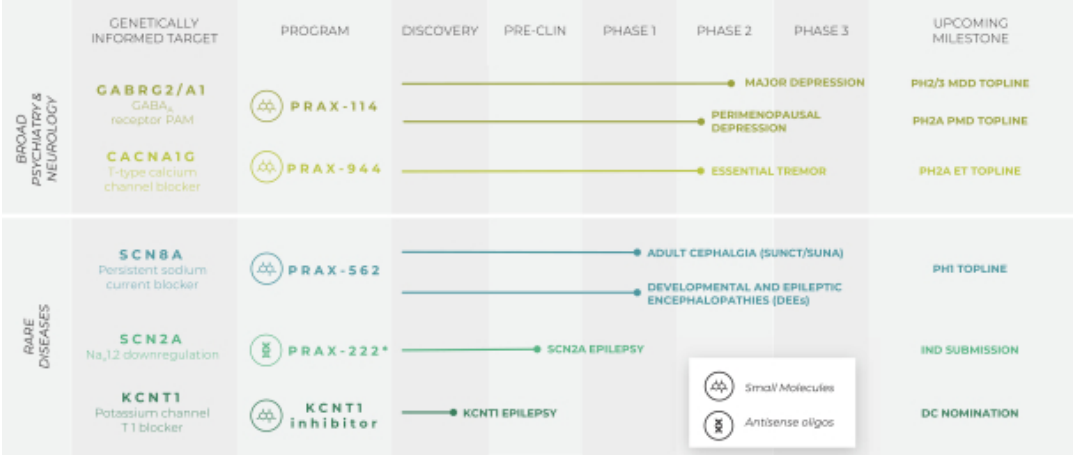
Our lead clinical program, PRAX-114, is an extrasynaptic-preferring $GABA_A$ receptor positive allosteric modulator, or PAM, for the treatment of patients suffering from major depressive disorder, or MDD, and perimenopausal depression, or PMD. Together, these conditions affect more than 22 million people in the United States, many of whom are not responsive to or are underserved by current treatments. PRAX-114 is under development as a potential best-in-class treatment as both a monotherapy and adjunctive therapy for both acute and maintenance settings. We believe that PRAX-114 has several advantages relative to currently available therapies and product candidates in the $GABA_A$ PAM therapeutic class, including a wider therapeutic window, patient-centric dosing and indication expansion opportunities. We have a multi-cohort, three-part Phase 2a clinical trial ongoing in Australia, with Part A having demonstrated rapid and marked improvements in depression scores in MDD patients. Topline data, which will include PMD patients (Part B) and longer-term dosing in MDD patients (Part C), are expected in . We intend to initiate the first of two registrational trials in the United States and Australia in for the treatment of MDD and expect topline data in .

Our second clinical program, PRAX-944, is a potential first-in-class selective small molecule inhibitor of T-type calcium channels, for the treatment of Essential Tremor, or ET. ET is a progressive and debilitating movement disorder with action tremors that significantly disrupt daily living, with an estimated prevalence of up to seven million patients in the United States. There is a high unmet need for ET patients given the limited treatment options, with only one approved pharmacotherapy that is poorly tolerated, resulting in high discontinuation rates and the need for invasive brain surgeries. Successful development of T-type calcium channel modulators in ET likely requires a PK profile with a blunted Cmax, which we believe positions our modified release formulation for PRAX-944 to be a first and best-in-class therapy. We have evaluated the safety and tolerability of PRAX-944 in over 100 healthy volunteers in four separate clinical trials and demonstrated pharmacodynamic effects in humans using electroencephalography, or EEG. We are currently conducting a Phase 2a proof-of-concept open-label trial in ET patients and plan to announce topline data in .

Our lead rare disease product candidate and third clinical program, PRAX-562, is a potential first-in-class selective persistent sodium current blocker for the treatment of a broad range of rare, devastating CNS disorders, such as severe pediatric epilepsy and adult cephalgia. To date, PRAX-562 has demonstrated efficacy in *in-vivo* models with significantly improved tolerability, suggesting an improved therapeutic index compared to other sodium channel blockers. We have initiated a Phase 1 trial of PRAX-562 in Australia to evaluate the safety, tolerability, pharmacokinetics, or PK, and effects

on an EEG biomarker in up to 129 adult healthy volunteers. We anticipate topline data from this trial in . In addition to our clinical programs, we have one preclinical program and one disclosed discovery program in development for severe genetic epilepsies and we continue to evaluate additional programs.

Below is a summary of our portfolio of programs, organized by their initial therapeutic focus addressing either broad psychiatric and neurologic conditions or rare diseases. We own global commercialization rights for all of our product candidates.



* PRAX-222 is a collaboration with Ionis Pharmaceuticals, or Ionis, and RogCon Inc. Ionis is eligible to receive double-digit royalties on net product sales worldwide.

Our company was founded by scientific innovators Kiran Reddy, M.D., David Goldstein, Ph.D. and Steven Petrou, Ph.D., who have pioneered work to identify and characterize de novo mutations in several dozen genes believed to cause a number of forms of severe pediatric epilepsies. These genes regulate key neuronal circuits in the brain which, when dysregulated, can result in severe seizure phenotypes as well as comorbid developmental delays, cognitive deficits, sensory-motor issues and often early death. Further, based on our understanding of a body of preclinical and clinical evidence, we now believe that these genes also play critical roles in the predisposition to other more prevalent neurologic and psychiatric disorders, such as mood disorders, movement disorders, pain syndromes, autism, migraine and schizophrenia, making them attractive targets for therapeutic intervention for a wide range of CNS disorders.

We have attracted a talented team of scientists and researchers in genetics and biology, chemistry and translational medicine as well as business leaders with established track records of successfully executing innovative drug discovery and development programs. Our Chief Executive Officer, Marcio Souza, most recently served as Chief Operating Officer at PTC Therapeutics, Inc. and was instrumental in the development and commercialization of multiple approved products while at NPS Pharmaceuticals, Inc., Shire Human Genetic Therapies Inc. and Sanofi Genzyme Corporation. Our Chief Medical Officer, Bernard Ravina, M.D., previously Chief Medical Officer at Voyager Therapeutics, Inc., is a neurologist and movement disorder specialist who brings decades of neurologic drug development experience from roles at Biogen, the University of Rochester and the NIH's Institute of Neurological Disorders and Stroke. Our Chief Financial Officer, Stuart Chaffee, Ph.D., co-founded Kymera Therapeutics, Inc. and has held multiple senior roles in finance, business development and corporate strategy at Biogen Inc., Zafgen, Inc. and Amgen Inc.

Our Approach

Each of our programs is based on four key principles that we believe will both increase the probability of success and allow us to efficiently translate insights into high-impact therapies for patients and society:

1. ***Focus on therapeutic targets identified through human genetics.*** Numerous CNS disorders are caused by an imbalance of excitation and inhibition in neuronal circuitry. By applying insights derived from the genetics of pediatric epilepsies, we have identified biological targets that we believe are implicated in determining neuronal excitability, not only in epilepsies, but also in a variety of more prevalent CNS disorders. For example, human genetics points to the relevance of the GABAergic system where mutations in $GABA_A$ receptors are associated with a number of rare pediatric epilepsies. The GABAergic system is also implicated in MDD, where enhancing $GABA_A$ activity is believed to be beneficial. As our understanding of the genetic underpinning of these disorders evolves, we plan to continually apply learnings to expand and advance our portfolio.
2. ***Utilize translational tools to validate the potential of our targets and product candidates.*** We leverage a number of translational tools to both confirm pharmacodynamic effects of our product candidates in the brain and establish on-mechanism effects, which we believe will result in an increased probability of success in the clinic. Our programs utilize validated, target-specific EEG endpoints to serve as robust markers of pharmacological engagement of the drug target and novel transgenic animal models to assess the therapeutic activity of our molecules. We expect these tools, along with rigorous preclinical PK and pharmacodynamic characterization of our molecules will position us to more efficiently translate preclinical findings into clinical utility.
3. ***Pursue efficient, rigorous clinical development paths to proof-of-concept in humans***. Our development strategies are focused on defining efficient paths to demonstrate the safety and therapeutic activity of our programs in humans. We select indications that we believe will enable the early demonstration of desired effect in a relatively small patient sample and we focus on validated clinical endpoints that both minimize inter-patient variability and offer a clear connection between pharmacodynamic effects and clinical measures that are meaningful to patients, physicians and regulatory agencies. Our global network of contract research organizations, or CROs, and scientists affords us the flexibility to conduct research and development activities in diverse geographic locations to accelerate our development timelines and limit geographic risks.
4. ***Apply patient-centric development strategies.*** We pursue the development of candidates that address the treatment needs of patients and the treating community, including targeting the underlying disease pathology versus just symptom management. We intend to develop therapies that provide patients long-term relief from their disorders and significantly reduce the overall burden to patients and caregivers. Our development strategies are tailored to demonstrate these benefits.

Our Strategy

Our goal is to translate genetic insights into high-impact therapies for millions of people suffering from CNS disorders characterized by imbalance of neuronal excitation-inhibition. Key components of our strategy include:

- **Efficiently advance PRAX-114 in MDD and PMD toward regulatory approval and commercialization.** PRAX-114 is a potential best-in-class $GABA_A$ receptor PAM currently in Phase 2a development for the treatment of MDD and PMD. Based on clinical data showing a rapid, pronounced and durable antidepressant effect in MDD patients, we plan to initiate our

first registrational trial in MDD in and expect topline data in . We are conducting a Phase 2a trial in Australia in PMD and expect to announce topline data in . We intend to develop PRAX-114 in the United States and in other countries as both a monotherapy and adjunctive therapy for MDD and PMD in both acute and maintenance settings.

- **Efficiently advance PRAX-944 in ET toward regulatory approval and commercialization.** PRAX-944 is a potential first-in-class selective small molecule inhibitor of T-type calcium channels in development for ET. We have evaluated the safety and tolerability of PRAX-944 in over 100 healthy volunteers in four separate clinical trials and demonstrated pharmacodynamic effects in humans using EEG. We are advancing PRAX-944 in an open-label Phase 2a trial in Australia and New Zealand in patients with ET and expect preliminary results in .
- **Build a rare disease franchise.** We are advancing several programs for patients with rare diseases, such as genetically defined populations suffering from Developmental and Epileptic Encephalopathies, or DEEs, a group of disorders associated with severe and frequent seizures, developmental delays, cognitive decline and high mortality rates. We have three rare disease programs in our pipeline, including PRAX-562, which we believe represents a first-in-class selective persistent sodium current blocker for the treatment of a number of rare diseases with limited or no treatment options. We have an ongoing Phase 1 trial for PRAX-562 in healthy volunteers in Australia and anticipate topline results by . We plan to initiate a Phase 2 trial for the treatment of Short-lasting Unilateral Neuralgiform headache attacks with Conjunctival injection and Tearing, or SUNCT, and Short-lasting Unilateral Neuralgiform headache with Autonomic symptoms, or SUNA, cephalgias. If we observe clinical proof-of-concept, we will then expand into DEEs. We believe that our additional programs for genetically-defined pediatric epilepsies will position Praxis as a leader in developing therapies for patients suffering from DEEs. Given the overlapping biology, phenotypic presentation and clinical execution considerations, we believe that we can translate learnings for the treatment of DEEs across our portfolio in order to more efficiently bring additional treatments to market.
- **Maximize the value of our product candidates through select indication expansion.** All of our clinical stage product candidates address targets with therapeutic potential beyond their lead indications. As these programs advance through the clinic, we will pragmatically evaluate indication expansion and consider subsequent clinical development that will expand the labels of our product candidates to encompass other compelling opportunities at a time when we determine to be most efficient.
- **Advance our understanding of genetics and neuronal imbalance to maintain our leadership and continue to build our pipeline.** Advances in the field of genetics continue to elucidate new insights into mutations that drive neuronal imbalance. Our team is deeply engaged in these efforts, which we believe will enable us to pursue a pipeline discovery and development strategy grounded in these learnings and coupled with our drug discovery, translational and clinical experience. As our knowledge base continues to grow, we believe our potential to deliver additional first and best-in-class medicines for patients will grow as well.
- **Commercialize our products in the United States and globally.** To realize the full potential of our product candidates, we intend to build a sales and marketing infrastructure to reach prescribers in the United States. In order to capitalize on market opportunities outside the United States, we may pursue collaborations with reputable pharmaceutical companies that have established presences in key geographies.

BROAD PSYCHIATRY AND NEUROLOGY PROGRAMS

PRAX-114

We are developing PRAX-114, an extrasynaptic-preferring $GABA_A$ receptor positive allosteric modulator, or PAM, for the treatment of patients suffering from major depressive disorder, or MDD, and

perimenopausal depression, or PMD. PRAX-114 is a potential best-in-class treatment as a monotherapy and adjunctive therapy for both acute and maintenance settings. We have a multi-cohort, three-part Phase 2a clinical trial ongoing in Australia, with Part A having demonstrated rapid and marked improvements in depression scores in MDD patients. Topline data, which will include PMD patients (Part B) and longer-term dosing in MDD patients (Part C), are expected in . We intend to initiate the first of two registrational trials, Phase 2/3, in the United States and Australia in for the treatment of MDD and expect topline data in .

There is significant unmet medical need in MDD and PMD with over 22 million individuals suffering from highly debilitating depressive symptoms in the U.S. Current pharmacological interventions suffer from multiple shortcomings including slow onset of efficacy, low response rates and side effects that limit patient compliance. PRAX-114 targets an increasingly well-understood neuronal circuit in the brain that we believe, when properly modulated, can result in a robust antidepressant effect with an advantageous safety and tolerability profile.

We believe that our PRAX-114 program has several advantages as compared to currently available therapies and product candidates in the $GABA_A$ PAM therapeutic class:

- **Wider Therapeutic Window**. We have determined that PRAX-114 is an approximately 10.5-fold more potent PAM of the extrasynaptic form of $GABA_A$ receptors compared to the synaptic form. By preferentially modulating extrasynaptic $GABA_A$ receptors, we believe PRAX-114 has the potential to mediate antidepressant and anxiolytic activity without the significant sedation observed with less selective neuroactive steroids.
- **Patient-Centric Dosing.** We believe the ability to administer PRAX-114 with or without food is key for clinical and commercial success in MDD and is critical for a patient-centric therapeutic, as many patients with depression suffer from appetite disturbance. We have observed rapid absorption of PRAX-114 with a favorable PK profile across multiple trials. Based on clinical findings, we believe that PRAX-114 does not need to be taken with food to achieve therapeutic exposure, whereas other $GABA_A$ PAMs may require food to achieve therapeutic exposure.
- **Chronic Administration**. After consultation with the U.S. Food and Drug Administration, or the FDA and other stakeholders in MDD and PMD therapy, we designed our Phase 2/3 trial of PRAX-114 to include 28-day nightly dosing to evaluate patients at both 14 days to assess the rapidity and robustness of response and 28 days to measure durability of effect. We believe that a chronic dosing paradigm is consistent with the duration of depressive episodes and will provide the most substantial benefit to patients in controlling their disease, further differentiating PRAX-114 from other $GABA_A$ PAMs.
- **Indication Expansion.** Because PRAX-114 has demonstrated a novel pharmacology and, to date, has a well-tolerated profile, we believe PRAX-114 is suitable for potential development across a wide-range of indications in psychiatry and neurology, providing sizable expansion opportunities to explore in addition to MDD.

Major Depressive Disorder

Major Depressive Disorder, or MDD, is a chronic psychiatric condition causing severe impairments that interfere with the ability to carry out life activities. An MDD episode is characterized by a period of at least two weeks of persistent depressed mood and/or the loss of interest or pleasure in activities, accompanied by sleep and appetite disturbance, fatigue, concentration difficulty, cognitive impairment, feelings of guilt, psychomotor retardation or agitation and suicidal ideation. MDD is one of the most prevalent psychiatric disorders. In the United States, approximately 19 million adults, or 7% of the adult population suffer from MDD, with episodes lasting on average six to eight months. It is estimated that MDD affects more than 300 million people worldwide.

MDD is a chronic psychiatric condition that requires long-term treatment, with the ultimate goal of achieving remission. MDD is associated with an elevated risk of suicide, underscoring the need for rapid and effective treatment. The most explored pharmacological mechanisms for treating MDD target monoamine neurotransmitters. Drugs in this class include selective serotonin reuptake inhibitors, or SSRIs, serotonin and norepinephrine reuptake inhibitors, or SNRIs, bupropion and other monoaminergic medications. SSRIs and SNRIs are associated with significant side effects, including weight gain, sexual dysfunction, drowsiness, nausea, insomnia and discontinuation syndrome, which negatively impact treatment outcomes, quality of life and adherence in MDD patients.

Approximately seventy percent of MDD patients fail to respond to current first-line antidepressant treatments. Further, those patients that are responsive typically require approximately six to eight weeks of treatment to show a clinically meaningful response and approximately 40% of patients on therapy discontinue treatment due to either a loss of response or adverse side effects. Finally, 33% of patients fail to respond after treatment with three or more different standard of care therapies.

Among the MDD patients who experience a response to treatment, the majority do not achieve remission. Even for patients deemed responsive, disease burden often persists through the presence of residual depression symptoms that lead to an ongoing negative impact on home, interpersonal and occupational functioning, as well as a significantly increased risk of relapse of the full depressive syndrome and worse comorbid outcomes, including suicide.

Despite the numerous and long-standing antidepressant treatment options, there continues to be an unmet need for antidepressants that provide rapid onset of effect, higher remission rates, efficacy throughout the depressive episode, an improved tolerability profile and patient-centric dosing that is aligned with the clinical care and the course of MDD and its accompanying comorbid symptoms.

Perimenopausal depression

Perimenopause is the transition between the onset of hormonal and clinical features of menopause and the one-year period after the final menses. Perimenopause can last up to 10 years. Women with no lifetime history of major depression who have entered the perimenopause period are found to be twice as likely to develop significant depressive symptoms as women who have not entered the perimenopause period. Notably, the increased risk for depression during the perimenopausal transition has been observed to decline substantially after the final menstrual period.

There are over 30 million women in the United States between the ages of 45 and 55 years who are at risk of developing perimenopause symptoms, with an estimated three million developing mood symptoms such as depression, anxiety, irritability and suicidal ideation and behavior and an estimated 20 million women developing associated vasomotor symptoms or hot flushes. Notably, suicide rates are the highest among women 45 to 59 years of age and have increased by approximately 42% in recent decades.

Although primarily viewed as a reproductive transition, the symptoms of perimenopause are largely neuropsychiatric in nature. Neurological symptoms that emerge during perimenopause are indicative of disruption in multiple estrogen and progesterone-regulated systems such as thermoregulation, sleep, circadian rhythms and sensory processing and affect multiple domains of cognitive function. Perimenopausal depression also appears to impact the clinical symptomatology of menopause, with the presence of depression being associated with a greater degree of menopausal hot flushes than in women without perimenopausal depression.

There is substantial evidence that fluctuations in estrogen and progesterone, the precursor of the endogenous neuroactive steroid allopregnanolone, a $GABA_A$ receptor PAM, are in part responsible for the mood changes, hot flushes and other neurologic symptoms of perimenopause. Similar to MDD,

SSRIs and SNRIs have shown limited efficacy in treating perimenopausal depression. There remains an unmet medical need for effective treatment of core depression symptoms and associated physical symptoms of menopause.

A $GABA_A$ receptor PAM, like PRAX-114, that potentiates the activity of endogenous neuroactive steroids on $GABA_A$ receptors, may offer broader therapeutic benefit compared to current standard of care antidepressants.

$GABA_A$ in depression

Gamma-aminobutyric acid, or GABA, is the principal neurotransmitter mediating neuronal inhibition in the brain. Neurons that produce GABA, known as GABAergic neurons, are present throughout the brain, representing between 20 percent and 40 percent of all neurons depending on the region. Their primary role is to balance and fine tune excitatory neurotransmission of various neuronal circuits. Whole-exome sequencing has identified $GABA_A$ receptor mutation as an important cause in a range of neurological conditions, underscoring their importance as central regulators of excitatory and inhibitory balance in the brain.

It is well established that GABAergic signaling is impaired in patients with MDD and other stress-related mood disorders. GABA levels, levels of the GABA synthesizing enzyme GAD67, as well as $GABA_A$ receptor levels, have been shown to be reduced in brains of patients with MDD. In addition, decreased GABAergic neuron function, most notably in the prefrontal cortex, has been documented in MDD patients and in preclinical animal models of depression. Endogenous neuroactive steroids, such as allopregnanolone and pregnanolone or synthetic derivatives thereof, such as PRAX-114, are known to potentiate the activity of $GABA_A$ receptors. Both human and animal data reveal an important role for neuroactive steroids in these GABAergic deficits and levels of endogenous neuroactive steroids are decreased in individuals with MDD and PMD.

Of particular relevance to the PRAX-114 program is the more recently established link between GABAergic signaling, neuroactive steroid levels and stress—a well-established risk factor for MDD and other mood disorders. In preclinical models, exposure to chronic stress leads to reduced neuroactive steroid biosynthesis and reduced GABAergic inhibition in depression-relevant brain circuits. This ultimately results in increased anxiety and depression-like behaviors. In particular, it has been shown that stress causes long-lasting loss of GABAergic inhibition in the amygdala, a brain region central to the stress response involved in controlling emotions. This reduced inhibition causes increased activity of the amygdala and is associated with an exaggerated stress hormone response.

We believe that enhancing modulation of $GABA_A$ receptors in patients with depression and anxiety has the potential to restore normal function in these circuits, leading to broad applications in mood and anxiety disorders.

$GABA_A$ receptors: The target of PRAX-114

PRAX-114 is a small molecule neuroactive steroid that acts as a positive allosteric modulator of $GABA_A$ receptors. Positive allosteric modulators, or PAMs, are substances that bind to a receptor, such as $GABA_A$, to enhance that receptor's response to its endogenous ligand (or endogenous agonist). $GABA_A$ PAMs bind to a distinct site from endogenous GABA, an allosteric binding site, and do not activate the receptor in the absence of the ligand. Allosteric modulators are believed to have improved safety profiles and are less likely to result in tachyphylaxis, or decreasing drug response, as compared to agonists. GABA exerts its effects through binding to two types of $GABA_A$ receptors, synaptic and extrasynaptic receptors, which differ in their protein subunit composition, physical location on the cell surface and functional role in modulating neuronal circuits.

GABA$_A$ receptors are composed of five subunits which include two alpha, two beta and a fifth subunit (either gamma or delta) that is dependent on the type of receptor. Synaptic GABA$_A$ receptors, which are located in the synapse of neurons, contain a gamma subunit while GABA$_A$ receptors located outside of the synapse, referred to as extrasynaptic GABA$_A$ receptors, contain a delta subunit. Molecules that act as PAMs of only the synaptic GABA$_A$ receptor, such as benzodiazepines, bind to sites situated at the interface between the alpha and gamma subunits. Molecules that act as PAMs of both synaptic and extrasynaptic GABA$_A$ receptors, such as the neuroactive steroids allopregnanolone and PRAX-114, bind to sites situated at the interface between the alpha and beta subunits present in both types of receptors. The figure below displays the synaptic binding site for drugs such as benzodiazepines, and the distinct extrasynaptic and synaptic binding sites for neuroactive steroids, such as allopregnanolone and PRAX-114.

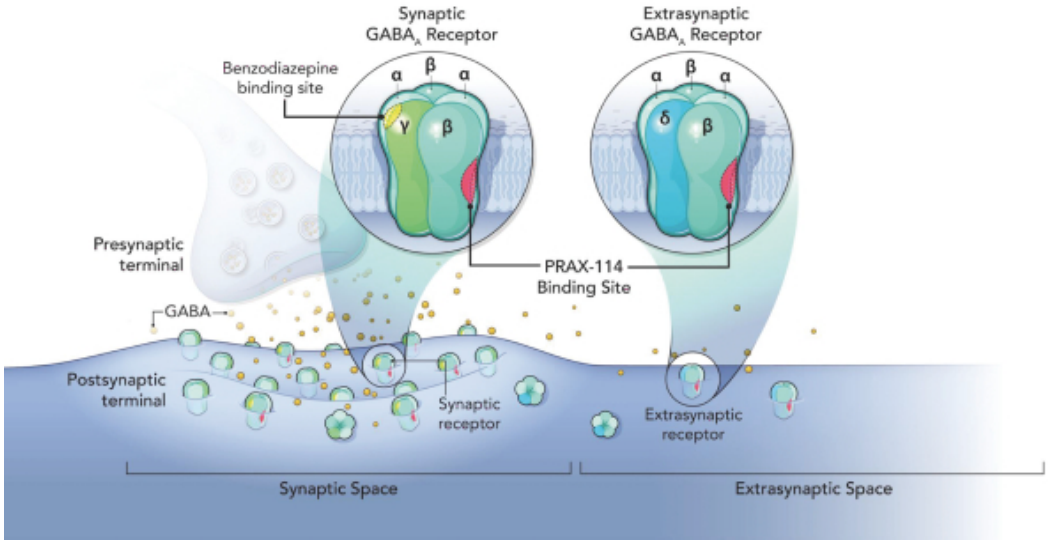


Figure 1. GABA$_A$ synaptic and extrasynaptic receptors differ in structure and function.

Synaptic and extrasynaptic GABA$_A$ receptors have distinct functions. Synaptic GABA$_A$ receptors are responsible for short-lasting, or phasic, inhibition of neurons in response to GABA release at the synapse. By contrast, extrasynaptic GABA$_A$ receptors drive continuous, or tonic, low-level inhibition of neurons in response to lower ambient levels of GABA outside of the synapse. While synaptic receptors can respond quickly to stimulation and network demand, extrasynaptic receptors have a broader modulatory role, serving to continuously modulate the overall excitability of neurons.

Molecules that act as PAMs of only the synaptic GABA$_A$ receptor, such as benzodiazepines and barbiturates, are used for sedation, sleep induction and anxiolysis, and have anticonvulsant and muscle relaxant properties. These drugs have potent and rapid onset of activity but have not demonstrated antidepressant effects.

Allopregnanolone is an endogenous neuroactive steroid and a PAM of both the extrasynaptic and synaptic GABA$_A$ receptors, which has been associated with antidepressant activity. However, allopregnanolone also has shown significant dose-limiting sedative activity, which we believe is likely mediated at least partially by its effects on synaptic GABA$_A$ receptors. Despite this limitation, a

formulation of allopregnanolone has been approved and is marketed as Zulresso to treat post-partum depression.

The distinct effects mediated by these classes of $GABA_A$ PAMs suggest that modulation of extrasynaptic $GABA_A$ receptors is responsible for the antidepressant effects demonstrated by allopregnanolone. One of the goals for a next generation neuroactive steroids, such as PRAX-114, is to preferentially modulate extrasynaptic $GABA_A$ receptors while minimizing the sedative impact from modulation of synaptic $GABA_A$ receptors.

PRAX-114 preference for extrasynaptic $GABA_A$ receptors

To assess the relative potency *in-vitro* of PRAX-114-mediated $GABA_A$ receptor activation for synaptic and extrasynaptic receptors, we measured the peak current induced by a low concentration of GABA (2 µM) in the presence of increasing concentrations of PRAX-114 in CHO cells expressing either extrasynaptic (a4ß3d) or synaptic (a1ß2g2) human $GABA_A$ receptors. In this model, PRAX-114 potentiates the GABA-activated current of both extrasynaptic and synaptic $GABA_A$ receptors, but was approximately 6.4-fold more potent in potentiating the extrasynaptic form of the receptor than the synaptic form based on the concentration that gives half-maximal response, or EC_{50}. At a concentration that activates extrasynaptic $GABA_A$ receptors to the equivalent of full activation by the endogenous ligand GABA (~260 nM, 300% potentiation of 2µM GABA), PRAX-114 led to 10.5-fold greater potentiation of extrasynaptic $GABA_A$ receptors than synaptic $GABA_A$ receptors (29%) (Figure 2, Table 3).

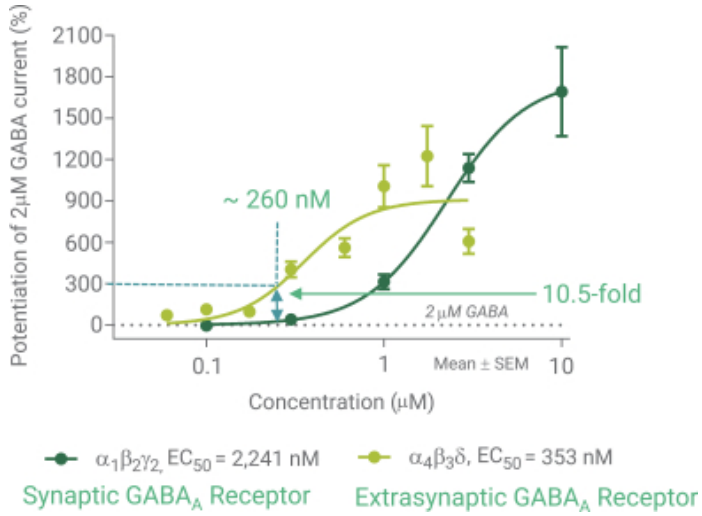


Figure 2. At 300 % extrasynaptic $GABA_A$ receptor potentiation (equivalent to ~ 100% activation by endogenous agonist GABA), PRAX-114 led to 10.5-fold greater potentiation of extrasynaptic $GABA_A$ receptors than synaptic $GABA_A$ receptors (29%).

In the same assay, at the same level of extrasynaptic $GABA_A$ receptor potentiation (300%), other $GABA_A$ receptor PAM neuroactive steroids in development, or on the market, demonstrated only 0.4 to 2.6 fold greater potentiation of extrasynaptic $GABA_A$ receptors, which compares unfavorably to the 10.5 fold observed for PRAX-114 (Table 3). Based on these assay conditions, we believe that the differentiated preference at extrasynaptic $GABA_A$ receptors by PRAX-114 will allow it to achieve high levels of extrasynaptic GABAergic activation with improved tolerability.

	Dosing	$\alpha_4\beta_3\delta$ % potentiation (Equivalent of full activation by GABA)	$\alpha_1\beta_2\gamma_2$ % potentiation	Fold efficacy $\alpha_4\beta_3\delta/\alpha_1\beta_2\gamma_2$
PRAX-114	**Oral**	**300%**	**29%**	**10.5**
Zuranolone	Oral	300%	117%	2.6
Ganaxolone	IV, Oral	300%	794%	0.4
Zulresso (brexanolone)	IV	300%	306%	1.0

Table 3. Comparison of the degree of *in-vitro* $GABA_A$ receptor potentiation achieved by PRAX-114 and other neuroactive steroid $GABA_A$ PAMs. $\alpha4\beta3\delta$: extrasynaptic $GABA_A$ receptors, $\alpha1\beta2\gamma2$: synaptic $GABA_A$ receptors.

PRAX-114 clinical development in depression

We have initiated clinical development for PRAX-114 in mood disorders. To date, two Phase 1 clinical trials of PRAX-114 have been completed in healthy volunteers. These studies in 82 healthy volunteers showed PRAX-114 to be well-tolerated, with dose-dependent pharmacodynamic effects. We currently have a Phase 2a clinical trial ongoing in Australia, which showed rapid and marked improvement in depression scores in MDD patients, and a pharmacokinetics bridging study in healthy volunteers that is also ongoing. We intend to initiate the first of two registrational, Phase 2/3, trials in the United States and Australia in for the treatment of MDD and expect topline data in .

Phase 1 SAD and MAD trials in healthy volunteers

We conducted a Phase 1 randomized, double-blind, placebo-controlled single ascending dose, or SAD, trial of PRAX-114 in healthy volunteers to evaluate safety and tolerability of PRAX-114. This trial enrolled 36 volunteers who were randomized into cohorts dosed with 1mg, 3mg, 10mg, 30mg or 60mg of PRAX-114 or placebo. PRAX-114 was well-tolerated and no serious adverse events, or SAEs, were reported in this trial.

We subsequently conducted a Phase 1 randomized, double-blind, placebo-controlled multiple ascending dose, or MAD, trial in healthy volunteers in Australia to evaluate the safety, tolerability and pharmacokinetics of PRAX-114 and to assess the effect of food on drug exposure. Thirty-six volunteers were randomized to receive daily doses of 15mg, 30mg or 60mg of PRAX-114 or placebo for 14 days. Ten additional volunteers in a food effect cohort received 30mg doses of PRAX-114 when they were in a fasted state or with a high-fat meal.

As part of our MAD trial, we measured the effect of PRAX-114 on the quantitative EEG, or qEEG, beta power, to understand the pharmacodynamic effect of PRAX-114 on $GABA_A$ receptor activation. An EEG is a real-time non-invasive measure of electrical activity of neurons in the brain. The frequency and amplitude of the detected electrical signals provide insights into brain function and brain state (e.g., awake, deep sleep, etc). qEEG, also called pharmaco-EEG, is a quantitative measure of the changes in brain activity in specific EEG frequency bands in response to treatment with a brain-active compound. Changes in beta power, specifically, are used as a well-validated pharmacodynamic biomarker of $GABA_A$ receptor activation in response to a brain active compound.

In both the Phase 1 SAD and MAD trials, we observed rapid absorption of PRAX-114 with approximately dose-proportional increases in peak concentration and total drug exposure. In the MAD trial, the half-life of the drug was between 12.2 and 14.8 hours, consistent with a once-daily dosing paradigm. Little or no accumulation of the drug was observed in the multiple dose trial over the ranges of doses tested.

We believe that the ability to administer PRAX-114 with or without food is key for clinical and commercial success in MDD, as many patients struggle with adherence to medication and forcing a dietary regimen would impose further complications in this vulnerable population. In the food effect cohort of the MAD trial, overall drug exposure as measured by area under the concentration curve, or AUC, of PRAX-114 increased by only 1.17-fold in the fed state versus in the fasted state. The primary effect of food was observed in the maximum drug exposure, or Cmax, which was decreased by 0.64-fold under fed conditions. These findings indicate that PRAX-114 does not need to be taken with food to achieve therapeutic exposures. According to results presented in a published patent application, Zuranolone, a $GABA_A$ PAM neuroactive steroid in development for treatment of MDD, exhibited a food effect that resulted in increases in Cmax of approximately 2.88-fold and in AUC of approximately 1.58-fold in the fed versus the fasted conditions (Table 4). We believe this food effect has led to the development of Zuranolone being carried out with a requirement for the compound to be administered together with a high-fat meal. We believe that the absence of a requirement that PRAX-114 be taken with food creates a potential competitive advantage.

Statistical Analysis of the Effect of High-fat Meal for PRAX-114 suspension (30mg)			Statistical Analysis of the Effect of High-fat Meal for Zuranolone capsules (30mg)		
PK Parameter	**Fed/Fasted Ratio**	**90% Confidence Interval**	**PK Parameter**	**Fed/Fasted Ratio**	**90% Confidence Interval**
Cmax (ng/mL)	0.64	**(0.46, 0.88)**	**Cmax (ng/mL)**	2.879	**(2.56, 3.28)**
AUC0-t (h*ng/mL)	1.17	**(0.91, 1.49)**	**AUC0-t (h*ng/mL)**	1.575	**(1.45, 1.69)**

WO2019/051264 AI Patent

Table 4. Food effect clinical studies of PRAX-114 and Zuranolone (WO2019/051264 A1). Subjects were administered a high-fat meal 30 minutes prior to administration of the compound in both studies.

In the MAD trial, PRAX-114 was generally well-tolerated, with no SAEs reported. The reported treatment-emergent adverse events, or TEAEs, were mild to moderate and were consistent with those expected for the mechanism of action. The most common adverse event was somnolence, which is characterized by sleepiness or drowsiness, and was reported by 78% (7/9) of those subjects receiving the 60mg dose; all events of somnolence were mild in severity. Increases in sleepiness as measured by the Stanford Sleepiness Scale occurred between one- and three-hours post-dosing, consistent with the period of peak drug concentrations; sleepiness ratings at the 60mg dose were similar to placebo within 4 hours post-dose. No patients in any of our trials experienced sedation, which is characterized by impaired consciousness. We did not observe a maximally tolerated dose, or MTD.

In our Phase 1 multiple ascending dose trial of PRAX-114 in healthy volunteers in Australia, we also observed the following TEAEs, all of which were mild to moderate in severity:

- 60mg dose (n=9), we observed nervous system disorder TEAEs, of somnolence (77.8% of subjects), headache (33.3% of subjects), dizziness (55.6% of subjects) and hypoaesthesia, or diminished sense of touch (22.2% of subjects). Other TEAEs observed in more than one subject were euphoric mood (22.2% of subjects), hyperhidrosis, or excessive sweating (22.2% of subjects) and muscle twitching (22.2% of subjects).
- 30mg dose (n=9), we observed nervous system disorder TEAEs of somnolence (44.4% of subjects) and headache (22.2% of subjects). Other TEAEs observed in more than one subject were skin irritation (55.6% of subjects) and euphoric mood (22.2% of subjects).
- 15mg dose (n=9), the only TEAE observed in more than one subject was fatigue (22.2% of subjects).
- Placebo group (n=9), we observed fatigue (22.2% of subjects).

TEAEs appearing to be dose related were somnolence, dizziness, headache, euphoric mood and hypoaesthesia.

We measured changes in qEEG beta frequency power in these volunteers to assess the effect of PRAX-114 on $GABA_A$ receptors in the brain on days 1 and 14 of this trial. PRAX-114 produced increases in the power of the beta-frequency band which were strongly correlated with dose and PRAX-114 levels in the blood. In these healthy volunteers at one hour post-dose, PRAX-114 30mg resulted in an average increase in qEEG beta power of approximately 1.6-fold compared to baseline and 60mg resulted in an increase in this measure of 2.8-fold compared to baseline (Figure 5). The effects on the qEEG beta power were sustained at Day 14. These data show that PRAX-114 rapidly engaged $GABA_A$ receptors in the brain and produced consistent effects on qEEG. This finding also supports comparison and translation of the efficacy and qEEG data from the pre-clinical studies, where a 1.6-fold increase in beta power was associated with robust efficacy in animal models of anxiety and depression and was used to inform dose selection in subsequent clinical trials.

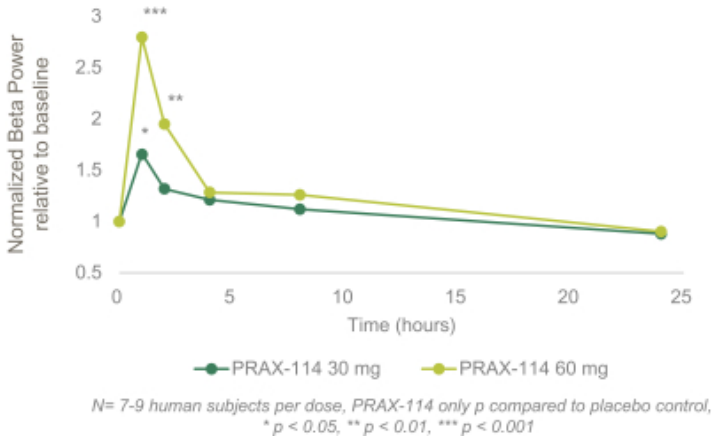


Figure 5. PRAX-114 (30mg and 60mg) showed a robust qEEG signal and target activation.

Notably, PRAX-114 showed increases in beta power up to 2.8-fold without achieving a MTD or demonstrating any SAEs. In a separate study, another molecule in development in the class resulted in degrees of sedation that were not tolerated at doses that resulted in increases in beta power by approximately 1.7-fold compared to baseline. This highlights the unique pharmacological profile of PRAX-114 and its ability to achieve high levels of GABAergic activation with improved tolerability.

Phase 2a trial in patients with depression

Based on the observed pharmacology in the Phase 1 trials, we are currently conducting a three-part, open-label, Phase 2a trial in Australia to assess the safety and efficacy of PRAX-114 in patients with moderate to severe MDD or PMD. We have completed Part A of this Phase 2a trial and Parts B and C are ongoing.

Part A results

Part A of the open-label trial included two weeks of treatment and was designed to evaluate the timing and magnitude of the antidepressant effects of PRAX-114 across a range of doses in patients with MDD. Patients were required to be between the ages of 18 and 65 and to have moderate to severe MDD for at least one month as defined by the Hamilton Depression Rating Scale, or HAM-D, score of 22 or higher. The HAM-D, one of the most widely-used clinical rating scales for depression,

was the main assessment used to quantify levels of depression in these patients. The 17 items used for scoring this scale cover a wide range of symptoms typically found with depression including mood, suicidal thoughts, insomnia, anxiety, loss of appetite and weight loss. Patients with more severe depression have higher scores. The effect of PRAX-114 was measured by the change in the HAM-D score relative to baseline. Patients who had previously failed to respond to a standard of care antidepressant in their current episode were eligible for inclusion. In addition to HAM-D, other scales used included the Montgomery–Åsberg Depression Rating Scale, or MADRS, the Hamilton Anxiety Rating Scale, or HAM-A, and the Symptoms of Depression Questionnaire, or SDQ. MADRS is a 10 item rating scale designed to assess the severity of symptoms in a depressive illness. HAM-A is a 14 item scale widely used to measure the severity of anxiety symptoms, including both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). SDQ is a 44 item self-reported scale designed to measure the severity of symptoms across several subtypes of depression, including irritability, anger attacks and anxiety.

Based on the Phase 1 data, we selected 3 doses: 45mg, 60mg or 80mg daily of PRAX-114. All three doses were expected to achieve exposures that would show clinical benefit based on the Phase 1 data and qEEG findings. The first week of treatment was conducted in an inpatient setting to facilitate daily efficacy and safety assessments and then patients were discharged and treated as outpatients for the second week. Patients were instructed to take PRAX-114 nightly before bed. Patients were not required to take PRAX-114 with food. Compliance was carefully monitored throughout the duration of the trial.

Thirty-three patients were enrolled and completed Part A. At baseline, patients had a mean HAM-D total score of 25, ranging from 20 to 33, indicating moderate to severe MDD. Twenty-six of the thirty-three participants had previously received an antidepressant during the current depressive episode but still had moderate to severe MDD. This failure to respond to initial antidepressant treatment has been associated with more severe and refractory depression. The remaining patients were not being treated with any antidepressant for the current episode before enrolling in the trial.

Dosing with PRAX-114 led to a rapid and marked decline in the HAM-D score (Figure 6). After one week of treatment, least squares, or LS, mean improvements of 15 to 19 points from baseline were noted across the three dose groups. After two weeks of treatment, all 3 dose levels showed mean improvements from baseline of 14 to 16 points. Across all dose levels, two-thirds of patients were responders (defined as a >=50% reduction in HAM-D) or were clinically in remission (HAM-D<=7) at the end of the 14 day treatment period. Changes in other depression-related scales measured such as MADRS, HAM-A and SDQ were consistent with the changes in HAM-D. While the study was not powered to show differences between dose levels, there was no notable dose response observed, which is common amongst trials of antidepressants.

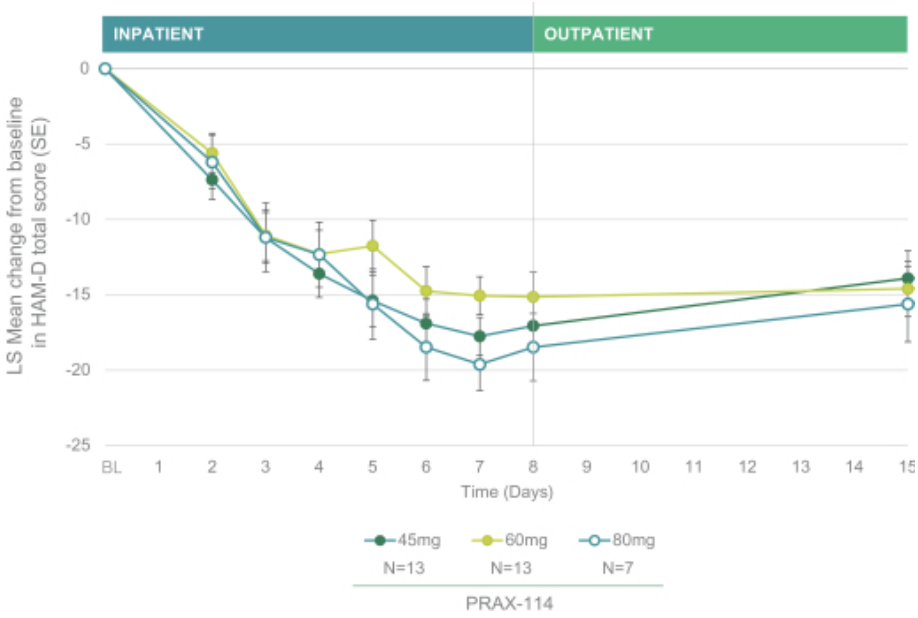


Figure 6. Reduction in HAM-D total score observed in MDD patients treated with PRAX-114.

After 14 days of treatment, patients were monitored for an additional 14 days. During this monitoring period, the core mood symptoms measured by the HAM-D generally remained stable with a slight increase in the insomnia item scores post-treatment.

While our Phase 2a trial is not placebo controlled, prior MDD trials provide important context for its interpretation. The rapid and large improvement in HAM-D scores seen in patients in Part A compares favorably to published reports on changes in HAM-D scale in clinical trials of approved antidepressants such as vortioxetine and duloxetine, among others, which commonly take approximately six to eight weeks to reach a maximal efficacy and often fail to differentiate from placebo at two weeks. Moreover, mean HAM-D changes from baseline at Day 14 for the placebo group of these randomized controlled antidepressant trials typically do not exceed 10 points. Even at the first post-dose assessment on Day 3, patients dosed with PRAX-114 had a mean decrease of over 11 points on the HAM-D scale, which compares favorably with the average changes reported in the placebo groups at Day 14 from randomized studies completed for recently approved antidepressants (Figure 7), and other common antidepressants after several weeks of dosing.

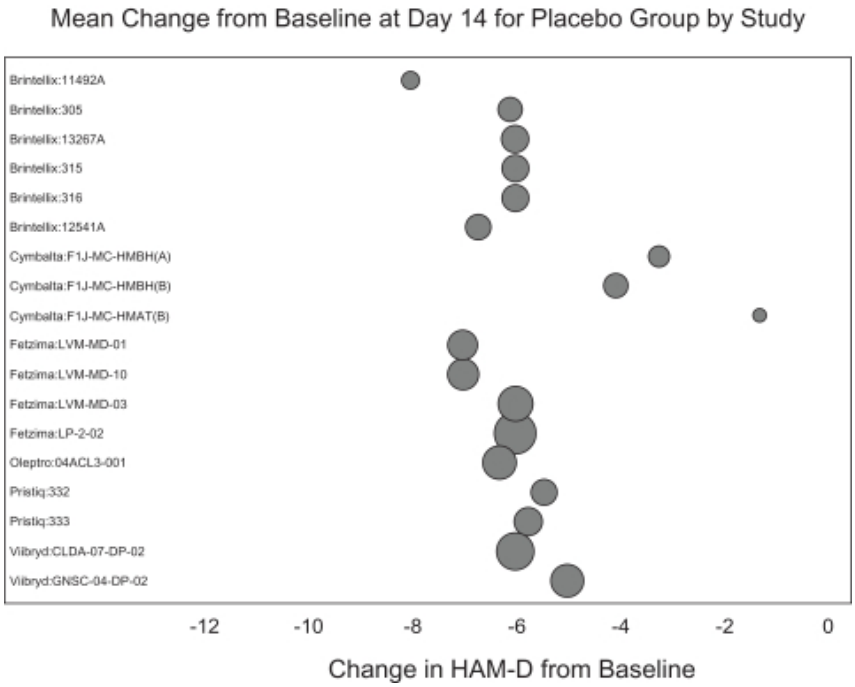


Figure 7. Change from baseline to Day 14 in HAM-D total score for the Placebo arm of selected randomized placebo-controlled studies of recently approved antidepressants. Bubble size is proportional to the sample size of the placebo group in each study. Across studies, the sample size in the placebo group ranged from 89 to 277.

PRAX-114 was well-tolerated across the dose range, including at the highest 80mg dose. This is consistent with an expected wider therapeutic window based on the preferential selectivity of PRAX-114 for extrasynaptic $GABA_A$ receptors. TEAEs were generally mild to moderate. Rates of somnolence, which is characterized by sleepiness or drowsiness, increased with dose, demonstrating a pharmacological effect which was somewhat mitigated by dosing at night versus the morning. With nighttime dosing, 12/33 patients (36%) noted somnolence post-dosing, which was generally time-limited and not experienced during the day time, substantially lower than the 78% reported in the Phase 1 60mg group with morning dosing. Notably, sedation, which is characterized by impaired consciousness, was not observed in any of our studies. There were no SAEs or discontinuations and study drug cessation at the end of the treatment period was well-tolerated.

In this MDD part of the trial, we also observed the following TEAEs in at least 2 subjects per dose level:

- 80mg dose (n=7), headache (42.9% of subjects), somnolence (42.9% of subjects), dizziness (57.1% of subjects), feeling drunk (28.6% of subjects) and diarrhea (28.6% of subjects).
- 60mg dose (n=13), headache (46.2% of subjects), somnolence (53.8% of subjects), dizziness (30.8% of subjects), feeling drunk (23.1% of subjects) and constipation (23.1% of subjects).
- 45mg dose (n=13), headache (53.8% of subjects), somnolence (15.4% of subjects), fatigue (23.1% of subjects), vessel puncture site bruise from blood draws (15.4% of subjects), abdominal distension (15.4% of subjects) and upper respiratory tract infection (15.4% of subjects).

Across all dose levels studied, headache (48.5%), somnolence (36.4%), dizziness (24.2%), fatigue (15.2%), feeling drunk (15.2%), constipation (12.1%) and vessel site puncture bruise (12.1%) were reported in >10% of subjects.

Parts B and C ongoing

We are currently conducting Part B of this trial in order to assess PRAX-114 in PMD patients. We are dosing up to twelve patients with PMD with 60mg of PRAX-114 nightly for 14 days on an outpatient basis. The dose for this part of the trial was selected based on the data from Part A. Inclusion criteria for Part B are similar to Part A and C, except that it requires participants to be females of 40 years of age or older with irregular menses and hot flushes. Part B will help to determine if PRAX-114 has an effect on broader menopausal symptoms, like hot flushes, in addition to confirming the antidepressant effect. We anticipate topline results by .

Part C of this trial is also ongoing. The goal of Part C is to evaluate the impact of four-week dosing on the treatment effect observed in the two-week Part A in a full outpatient setting. We expect to enroll up to twelve patients with MDD and dose PRAX-114 at 60mg nightly for four weeks. Inclusion criteria and efficacy endpoint measurements are the same as Part A. We expect topline data in that will inform our planned randomized, placebo-controlled trial, which we anticipate will also use four weeks of dosing.

Pharmacokinetics bridging study

To date, we have conducted all studies with PRAX-114 using a liquid, suspension formulation. For our registrational studies and subsequent potential commercial use of PRAX-114, we have developed a tablet formulation.

In a clinical PK bridging study, PRAX-114 was administered as a solid dose (i.e., tablet) formulation in single ascending doses of 40mg, 60mg and 80mg and compared to PRAX-114 suspension administered at the 60mg dose. The PK of the tablet formulation was found to be comparable to the suspension formulation at the 60mg dose level (Figure 8). Administration of the 60mg tablet formulation under fasted conditions resulted in a rapid absorption with a median tmax of ~1.0 hour, Cmax of ~400ng/mL, AUCinf of ~2600 hr*ng/mL and t1/2 of ~11-12 hours, similar to the 60mg oral suspension. Exposure to PRAX-114 increased approximately proportional to dose.

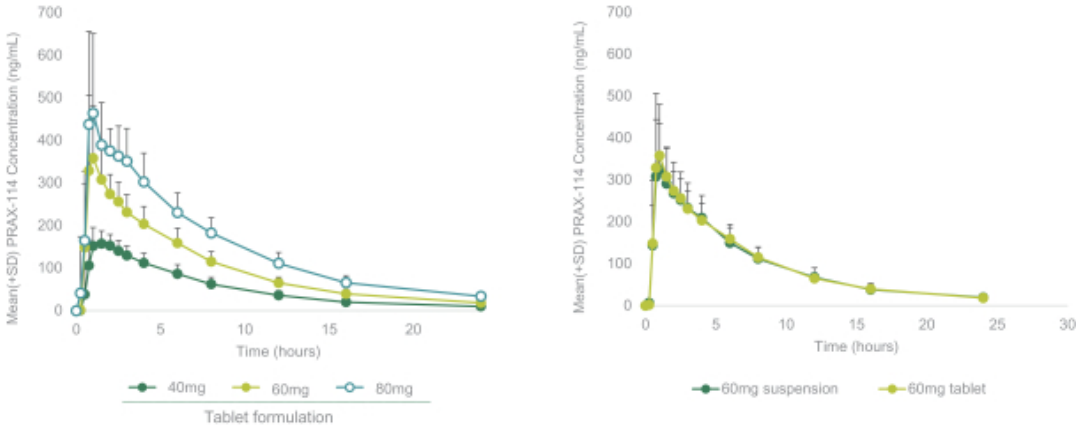


Figure 8. PRAX-114 dose-ranging pharmacokinetic study of tablet formulation and PRAX-114 pharmacokinetic bridging study of suspension and tablet formulations. Arithmetic means are displayed with standard deviations at each collection time point.

We are currently evaluating the effect of food on the solid formulation, and we expect to observe a similar effect of food to that seen with our suspension formulation. Like our suspension formulation, we expect that our solid formulation will not need to be taken with food to achieve targeted exposures.

Planned PRAX-114 clinical trials

We plan to submit an Investigational New Drug application, or IND, to the FDA and then initiate a randomized, double-blinded, placebo-controlled Phase 2/3 trial of PRAX-114 in the United States and other countries in approximately 160 moderate to severe MDD patients. Patients will be randomized 1:1 to receive nightly doses of 60mg of PRAX-114 or placebo for 28 days in a fully outpatient setting. The primary outcome will be change in the HAM-D score from baseline at Day 15 to demonstrate the rapid effect of PRAX-114. Patients will be required to be between the ages of 18 and 65 and have moderate to severe MDD for at least one month as defined by the HAM-D score of 23 or higher. A key secondary endpoint will be change in the HAM-D at Day 28 to assess the durability of effect of PRAX-114. This will allow us to demonstrate both the rapid onset and sustained effect of PRAX-114. In addition, we will also evaluate changes in other depression-related scales. We intend to initiate this trial in with topline data anticipated in . We believe this trial could serve as one of two registration trials in support of a future New Drug Application, or NDA, to the FDA for PRAX-114.

Upon completion of Part B of our Phase 2a trial, we intend to have a meeting with regulators to discuss further development of PRAX-114 in PMD.

PRAX-114 preclinical data

The goal of our preclinical program was to establish the *in-vitro and in-vivo* pharmacological profiles, antidepressant potential and tolerability of PRAX-114. In addition, we evaluated translational pharmacodynamic biomarkers to inform clinical development.

Antidepressant activity

To determine the antidepressant-like activity of PRAX-114, we used the Wistar Kyoto, or WKY, rat model. The WKY rat is an inbred rat strain that has increased sensitivity to stress and displays a depressive-like phenotype that is resistant to SSRI and SNRI treatment. A common way to assess depressive-like symptoms in animals is a test known as the forced swim test, or FST. The FST is based on the natural behavior of an animal when placed in a container filled with water from which it cannot escape. The rat will first make efforts to escape by swimming or climbing, but eventually will exhibit floating behavior, which is an indication of behavioral despair and is seen as a surrogate for depression. WKY rats display longer time inactive (floating) over a given time period than normal rats as an indication of increased behavioral despair.

We administered oral doses of PRAX-114 or a placebo to WKY rats and evaluated performance on the FST. At all doses of PRAX-114 tested, 1mg/kg, 3mg/kg and 10mg/kg, we observed a significant reduction in immobility time compared to rats that received a placebo, which we believe reflects an anti-depressive-like reaction or activity of PRAX-114. Importantly, and as described below, at these doses, PRAX-114 did not impair or enhance overall spontaneous activity of the rats in independent assays in the same animals, which we believe indicates that PRAX-114 was well-tolerated at these doses.

Tolerability

A common model to assess sedation in rats is the measure of spontaneous locomotor activity, or sLMA. Dosing rats with sedatives dose-dependently reduces their spontaneous movement in this assay. In this model, doses of PRAX-114 up to 30mg/kg had no significant impact on spontaneous locomotion, while doses as low as 1mg/kg had significant antidepressant-like effects in the WKY rat model, demonstrating a wide therapeutic window in these models with preclinical efficacy at doses well below sedative doses.

We believe that the therapeutic window observed in our *in-vivo* assays is consistent with the preference of PRAX-114 for extrasynaptic $GABA_A$ potentiation observed *in-vitro*.

EEG as a pharmacodynamic biomarker

In our rat translational biomarker model, we administered PRAX-114 to wild-type rats at doses ranging from 1 to 20mg/kg to assess the impact on power in the beta frequency band. We found that PRAX-114 dose-dependently increased the power in the beta frequency band and these changes correlated with changes in plasma pharmacokinetics. This EEG biomarker was used to inform dose-selection for PRAX-114 clinical studies. In our Phase 1 MAD trial, healthy volunteers administered the 30mg dose of PRAX-114 displayed an approximately 1.6-fold increase in qEEG beta power compared to baseline. In our preclinical studies, doses (and plasma/brain concentrations) that induced a 1.6-fold increase in the beta frequency power in rats were associated with both robust preclinical efficacy and tolerability. Specifically, the PRAX-114 dose that is estimated to induce a 1.6-fold increase in EEG beta power activity in rats was efficacious in the rat WKY model of depression and the window between that dose that increased beta power by 1.6-fold increase in EEG and the dose that caused a 50% reduction of spontaneous locomotion in the sLMA sedation assay, or ED_{50}, was ~11-fold, based on brain concentrations. In addition, at this well-tolerated brain concentration, PRAX-114 was efficacious in animal models of anxiety including conditional emotional response, or CER, punished drinking, or Vogel, and elevated plus maze, or EPM (Figure 9).

In the figure below, the lower bound of the preclinical efficacy and EEG bars are determined by the brain exposure at the lowest dose at which significant activity was observed ($p < 0.05$). The lower bound of the tolerability bar represents the TC_{50} in the brain. The upper bound represents the mean brain concentration at the highest dose tested in a given assay.

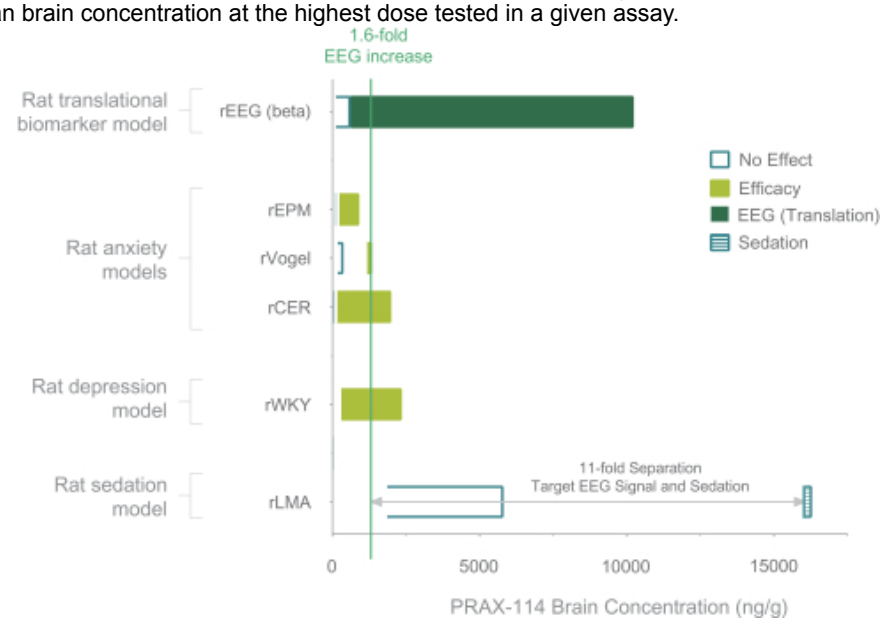


Figure 9. Summary of PRAX-114 preclinical data.

Based on our findings in preclinical models, we believe our initial results in humans are supportive of a wide therapeutic window which, in humans, begins at or below a daily dose of 30mg of PRAX-114 and extends to higher doses prior to the onset of potential dose-limiting somnolence or sedation. Our clinical studies to-date suggest that PRAX-114 doses up to 80mg, the highest we have tested in humans, remain well-tolerated. We have yet to identify the MTD.

PRAX-944

We are developing PRAX-944, a potential first-in-class selective small molecule inhibitor of T-type calcium channels, for the treatment of Essential Tremor, or ET. We have evaluated the safety and tolerability of PRAX-944 in over 100 healthy volunteers in four separate clinical trials and demonstrated pharmacodynamic effects in humans using EEG. We are currently conducting a Phase 2a proof-of-concept open-label trial in ET patients and plan to announce topline data in .

There is a large body of clinical, preclinical and genetic evidence that points to the involvement of T-type calcium channels in the cerebello thalamo cortical, or CTC, circuit, as a main driver of ET. ET is the most common movement disorder, affecting up to seven million patients in the United States, which is seven times more individuals compared to Parkinson's tremor. ET is a progressive and debilitating movement disorder with action tremors that significantly disrupt daily living. There is a high unmet need for ET patients given the limited treatment options, with only one approved pharmacotherapy that is poorly tolerated, resulting in high discontinuation rates and the need for invasive brain surgeries.

Successful development of T-type calcium channel modulators in ET likely requires a PK profile with a blunted Cmax and thoughtful clinical trial design and endpoint selection. We have designed our development program to include careful selection of clinical endpoints, a modified release formulation and dose titration strategy. We believe our modified release formulation for PRAX-944 is well positioned to be a first-in-class therapy in ET.

Because of the gatekeeper role of PRAX-944 in regulating neuronal firing patterns in multiple neuronal circuits, we believe PRAX-944 is suitable for potential development across a wide-range of indications in psychiatry and neurology, providing sizable expansion opportunities in addition to ET.

Essential Tremor

ET is the most common movement disorder, characterized by involuntary rhythmic movement in the upper limbs, with or without tremor in other body locations such as the head, vocal cords, or legs. ET is a day-time disease associated with debilitating tremors triggered when a patient voluntarily attempts to move. These tremors significantly disrupt daily living and are progressive in nature, with increases in tremor severity and amplitude commonly observed over the course of the disease. The upper-limb tremor can range from barely visible to greater than 20cm in amplitude.

Unlike Parkinson's disease, which is characterized by a rest tremor, the tremor of ET occurs with movement and therefore causes direct disability, as people are unable to perform basic, every-day functions such as writing, typing, drinking or feeding themselves. Given the debilitating physical challenges of the disease, ET has also been associated with high prevalence of comorbidities, including anxiety, depression and social phobia.

ET is a clinically well-recognized indication with defined diagnostic criteria established by The International Parkinson and Movement Disorders Society. ET affects an estimated one percent of the worldwide population and approximately five percent of adults over 60 years of age. It is estimated that there are up to seven million individuals with ET in the United States, up to seven times more than the second most common movement disorder, Parkinson's disease.

Despite the prevalence and significant disease burden of ET, only a fraction of patients (an estimated one million) are managed with pharmacological therapy, though an estimated 80% of those that are treated discontinue these medications due to limitations in efficacy and tolerability. We believe that the treated population will increase with the availability of new therapies with improved efficacy and tolerability.

Currently, there are only two drugs commonly used in ET. Propranolol, approved by the FDA in 1967, remains the only currently approved therapy for ET in the United States. A non-selective beta blocker, Propranolol is contraindicated for individuals with certain respiratory or cardiac issues, which are common comorbidities in the age group affected by ET. Primidone, an anticonvulsant used off-label, requires slow titration over six to eight weeks and can cause sedation and balance issue while accelerating osteoporosis with long-term use.

As a last line therapy, several thousand ET patients in the U.S. opt for invasive surgery each year. Interventions include gamma knife and focused ultrasound thalamotomy, where part of the thalamus involved in the CTC circuit is ablated, or deep brain stimulation, or DBS, where an electrode is implanted into the brain. These procedures are generally effective, but are associated with significant side effects and risk. Therefore, many patients who are eligible for surgical therapies do not elect to have these procedures.

A significant unmet need remains for the millions of ET patients that are not currently receiving treatment for their ET, or are underserved by existing treatment options. We believe that the relatively concentrated ET treatment setting composed of mainly neurology and movement disorder specialists would allow for the rapid adoption of a new treatment option that offered robust response rates and an improved tolerability profile.

Genetics of Essential Tremor

Our rationale for approaching ET through inhibition of T-type calcium channels is rooted in the genetics of epilepsy. CACNA1G, a gene that encodes for a particular isoform of T-type calcium channels, is one of the most significantly associated genes for generalized genetic epilepsy, or GGE. Some of these epilepsy patients also suffer from comorbid movement disorders such as tremor and ataxia. The odds of observing a T-type calcium channel mutation in the GGE population is 9 times of that of the healthy population. This supports the key role of T-type calcium channels in maintaining excitation and inhibition balance.

Additional human genetic data provide evidence for the role of T-type calcium channels in movement disorders. Whole exome sequencing of early-onset familial ET patients also identified mutations in CACNA1G that segregated with the tremor phenotype in multiple family pedigrees. Gain-of-function T-type calcium channel mutations have also been reported as causative variants for another phenotypically overlapping movement disorder called Cerebellar Ataxia. We believe this genetic link, along with the preclinical and clinical evidence, help confirm the role of T-type calcium channels in ET.

Role of T-type calcium channels in ET

T-type calcium channels function as the gatekeepers of neuronal firing patterns, controlling the switch between tonic and burst firing in the CTC circuit. The CTC circuit is a series of brain nuclei or neuron clusters, including the inferior olivary nucleus, cerebellar Purkinje cells, deep cerebellar nuclei, ventral motor thalamus and motor cortex, which work together in regulating physiological movements and tremor. All nuclei in this circuit contain pacemaker cells with inherent burst firing capability and express T-type calcium channels, which are known drivers of oscillatory burst firing.

T-type calcium channels are low voltage activated channels that respond to weak depolarization of neuronal membranes and are quickly inactivated (a closed state where the channel cannot be

reopened for some time). The opening of T-type calcium channels leads to membrane depolarization, which activates voltage-activated sodium channels, leading to the formation of an action potential and neuronal firing. When only a small number of T-type calcium channels are activated, leading to small T-type calcium channel mediated membrane depolarizations, the neuron generally generates unitary action potentials, also called tonic firing. When the activity of T-type calcium channels is increased, either due to genetic mutations or other changes in network activity that recruit more T-type calcium channels, a longer lasting depolarization is generated, resulting in high-frequency clusters of sodium channel driven action potentials, also called burst firing, as illustrated in the figure below.

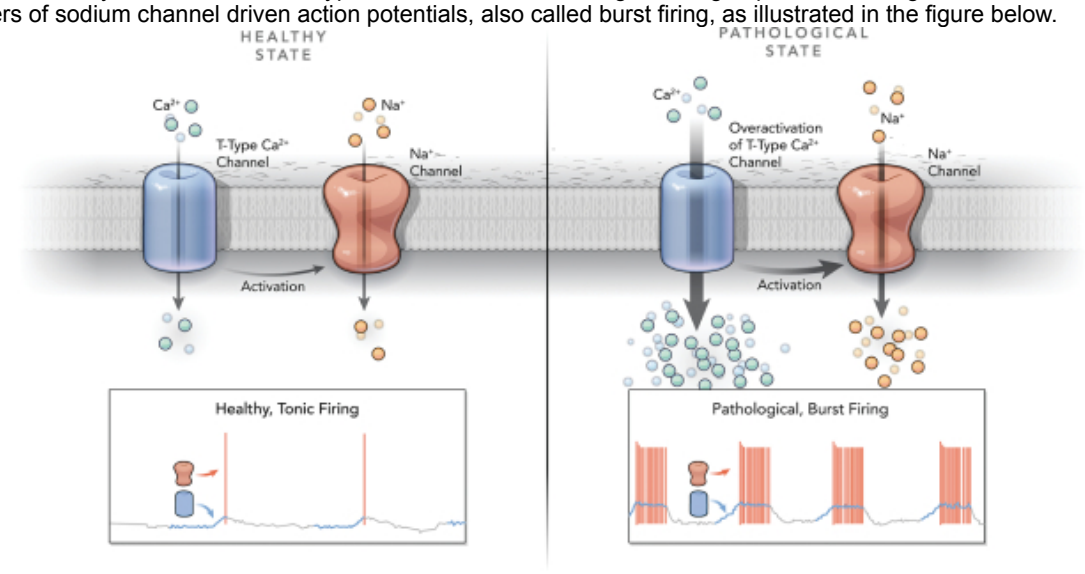


Figure 10. T-Type calcium channels are gatekeepers of neuronal firing patterns.

Neuroimaging of ET patients has consistently demonstrated that individual nuclei along the CTC circuit oscillate at tremor frequency and with strong coherence amongst the brain regions and movement in the affected muscles. Further, intraoperative real-time single-unit recordings of action potentials of individual neurons in the ventral motor thalamus of severe ET patients receiving DBS implants, in periods with and without tremors, further substantiates the central role of the CTC circuit and T-type calcium channels in ET (Figure 11). When no tremor was observed at rest, tonic firing was recorded in neurons of the ventral motor thalamus. During tremor, the same neurons fire in rhythmic bursts that are highly coherent with tremor activity. Furthermore, the emergence of action tremors coincided with the emergence of burst firing. Lesioning or DBS of the ventral motor thalamus has been shown to silence the oscillatory burst firing activity in the CTC circuit, resulting in significant tremor reduction. The strong temporal coordination between the tremors and burst firing, a neuronal firing pattern frequently gated by T-type calcium channel activity, strongly suggest that pharmacological inhibition of these channels may represent an effective pharmacological approach in ET.

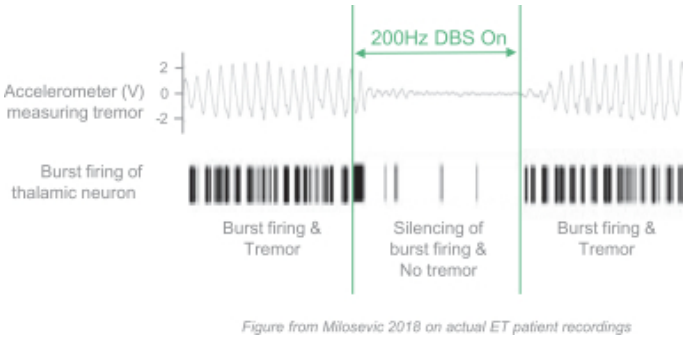


Figure 11. Thalamic neuron burst firing correlated with tremor activity in ET patients.

The role of the CTC circuit and T-type calcium channels has been further confirmed in animal models. A known pharmacological tremor model utilizes administration of harmaline, an alkaloid toxin, to animals. Harmaline, on administration to experimental animals such as rodents, induces an acute action tremor as well as rhythmic burst-firing activity in the CTC circuit similar to that observed in ET patients. We believe this model carries clinically predictive value, as compounds that improve tremor in ET patients clinically (e.g., propranolol, primidone) have also been shown to reduce harmaline-induced tremor preclinically; in contrast compounds that worsen tremor in patients (e.g., caffeine) also worsen tremor in this model. Similar to what's observed in ET patients, normalizing oscillatory activity in the CTC circuit, for example with DBS, reduces harmaline induced tremor in rodents. Pharmacological inhibition or genetic knockout of T-type calcium channels lead to resistance to harmaline-induced tremor.

PRAX-944 in Essential Tremor

We are advancing a modified release formulation of PRAX-944, a potent and selective small molecule inhibitor of T-type calcium channels, for the treatment of ET.

PRAX-944 Clinical Development in ET

We have evaluated the safety and tolerability of PRAX-944 in over 100 healthy volunteers in four separate clinical trials and demonstrated pharmacodynamic effects in humans using EEG. We are currently advancing PRAX-944 in an open-label Phase 2a trial in Australia and New Zealand in ET patients and expect topline data in .

Phase 1 trials in healthy volunteers using previous IR formulation

An immediate release, or IR, formulation of PRAX-944 was used in the initial Phase 1 trials and showed rapid absorption and high peak drug levels. Adverse events like nausea were associated with the high peak levels. This prompted the development of modified release, or MR, formulations, which can have slower absorption and improved tolerability.

Phase 1 trials in healthy volunteers using MR formulation

Our current clinical formulation of PRAX-944 is designed to release 80% of the drug product over 7 hours. This slow release is desirable for diseases like ET where minimum, or trough concentrations, need to be maintained during the day when tremor is present for efficacy and for reducing side effects associated with high peak concentrations which could limit the ability to treat patients at therapeutic doses.

In our Phase 1 multiple dose trial of the MR formulation of PRAX-944 in Australia, doses of 20mg and 40mg were well-tolerated over 8 days. Adverse events were transient and occurred at a rate similar to placebo. We observed the following TEAEs all of which were mild to moderate:

- 40mg dose (n=6): we observed the nervous system TEAEs of somnolence (33.3%), headache (33.3%) and dizziness (33.3%). The TEAEs also included fatigue (33.3%) and hot flash (33.3%). We observed ECG application site rash, EEG application site skin reaction, nausea, vision blurred, thermal burn (accidental) and euphoric mood in 16.7% of subject each.
- 20mg dose (n=6): we observed the nervous system disorder TEAEs of somnolence (16.7%) and headache (33.3%). We also observed nausea (33.3%), fatigue (16.7%), vomiting (16.7%) and dry throat (16.7%).
- Placebo (n=4): we observed the nervous system TEAEs of headache (25%), somnolence (25%) and dizziness (25%). We also observed fatigue (50%) and nausea (25%).

A single dose of 60mg was not tolerated in the single dose trial due to reports of nausea in five of six subjects and vomiting in three of six subjects. In the multiple dose 20mg and 40mg groups, three subjects reported nausea with one subject also reporting vomiting; these events were mild in severity and resolved on Day 1 of dosing. No subjects reported nausea or vomiting after Day 1 of dosing (Figure 13). While a single dose of 60mg was not well tolerated, the average peak drug levels (138ng/mL) observed in the 40mg group after eight days of treatment were greater than those seen with the single 60mg dose (130ng/mL) on Day 1 (Figure 12). Improved tolerability at higher concentrations following repeated dosing suggests that titration to higher doses might be a viable strategy to further improve the tolerability profile.

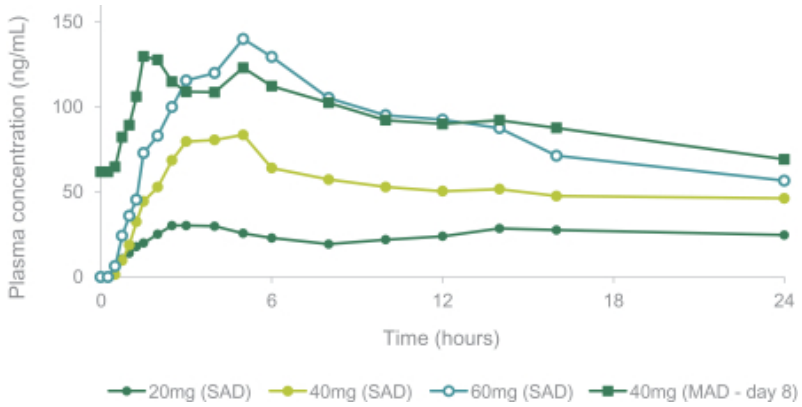
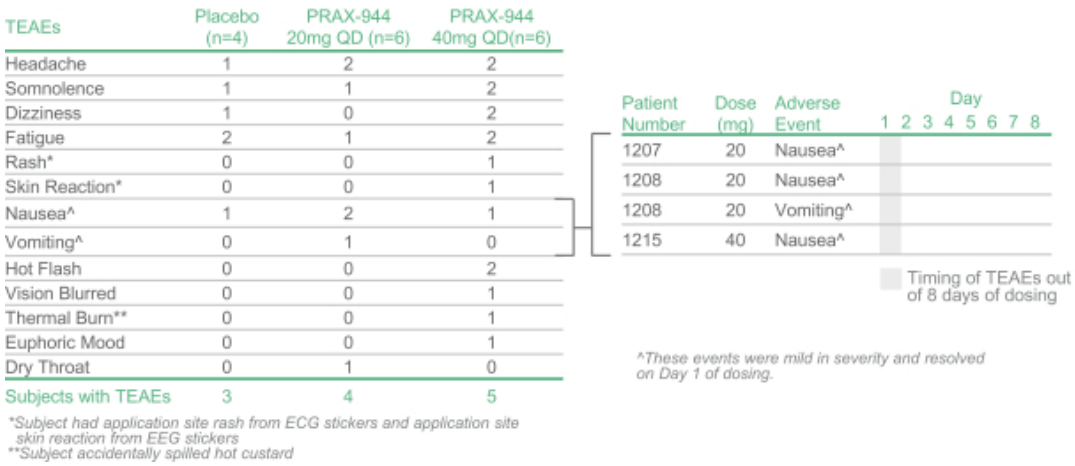


Figure 12. Sustained exposures were observed for the MR formulation of PRAX-944.



TEAEs	Placebo (n=4)	PRAX-944 20mg QD (n=6)	PRAX-944 40mg QD(n=6)
Headache	1	2	2
Somnolence	1	1	2
Dizziness	1	0	2
Fatigue	2	1	2
Rash*	0	0	1
Skin Reaction*	0	0	1
Nausea^	1	2	1
Vomiting^	0	1	0
Hot Flash	0	0	2
Vision Blurred	0	0	1
Thermal Burn**	0	0	1
Euphoric Mood	0	0	1
Dry Throat	0	1	0
Subjects with TEAEs	3	4	5

*Subject had application site rash from ECG stickers and application site skin reaction from EEG stickers
**Subject accidentally spilled hot custard

^These events were mild in severity and resolved on Day 1 of dosing.

Figure 13. TEAEs observed in the PRAX-944 MAD trial were mild-moderate and transient.

Quantitative EEG studies in healthy volunteers were used to assess the effect of PRAX-944 on T-type calcium channels in the brain. One frequency band known to be driven by T-type calcium channel activation is the sigma frequency band (11 to 15 Hz) during non-rapid eye movement sleep, or NREM sleep. T-type calcium channels expressed in thalamic neurons are critically involved in the generation and modulation of these rhythmic thalamocortical oscillations during NREM sleep.

In our preclinical studies, dosing of normal rats with PRAX-944 led to robust and dose-dependent changes in EEG activity. Because similarly robust sigma frequency band changes after dosing with PRAX-944 are observed during NREM sleep in rats and humans, our hypothesis is that the inhibition of this EEG signal can be used as a pharmacodynamic biomarker. Because the doses at which EEG changes observed in rats are similar to those that demonstrated efficacy in a preclinical model of essential tremor, or the harmaline model, we believe that this EEG biomarker can be used to estimate the dose of PRAX-944 that will produce a therapeutic effect in ET.

In our Phase 1 trial, 20mg and 40mg doses of PRAX-944 administered to healthy volunteers produced changes in the qEEG recordings of the sigma frequency band during NREM sleep consistent with those observed in rats. This indicated that PRAX-944 reached target levels in the brain needed to inhibit T-type calcium channels. Based on the overlap of these EEG changes with drug levels showing efficacy in the preclinical harmaline model, we believe that 20mg and 40mg doses of PRAX-944, which were well-tolerated in healthy volunteers without titration, have the potential to reduce tremor in patients with ET.

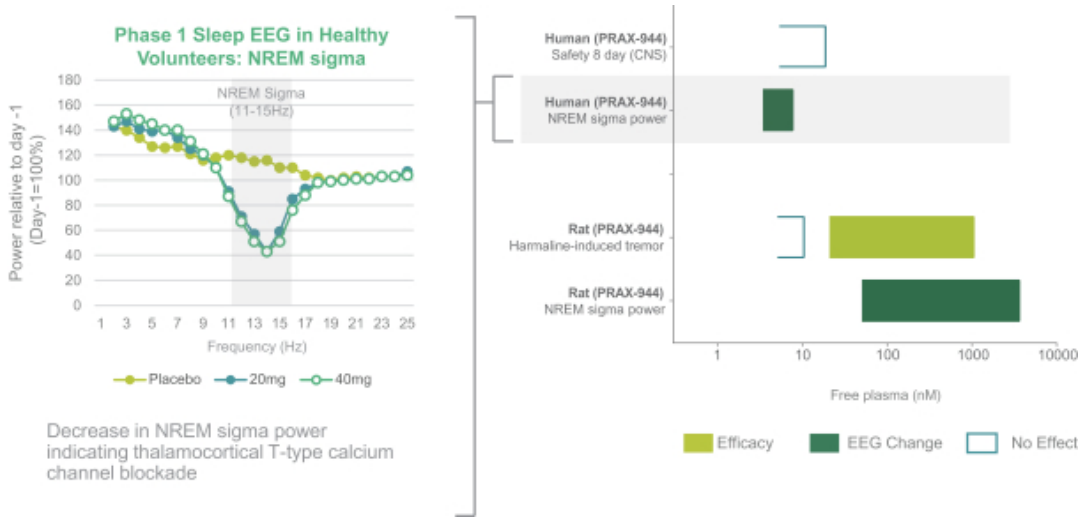


Figure 14. Exposures of PRAX-944 that decreased sigma band activity were well-tolerated in heathy volunteers and were associated with harmaline tremor reduction.

Titration study in healthy volunteers

As part of our ongoing development efforts, we are exploring doses from 5mg daily to 120mg daily in a trial in healthy volunteers. This titration study is expected to inform the dose range for our future development in ET and potentially other indications.

We plan to announce topline data from this dose titration study in .

Phase 2a trial in patients with ET

We are currently conducting a Phase 2a proof-of-concept open-label trial in up to twelve patients with ET in Australia and New Zealand. Patients receive 20mg daily dosing of PRAX-944 for one week followed by 40mg daily dosing for the second week, taken in the morning. Based on the data from the titration trial in healthy volunteers, we may modify the dosing regimen and enroll an additional cohort of ET patients.

Studies in movement disorders require careful attention to methods for obtaining and scoring outcome measures. We are measuring changes in tremor with different, complementary approaches including components of the Essential Tremor Rating Scale, or TETRAS, Performance Scale and accelerometry. TETRAS is a well-validated and widely used clinical rating scale that measures the severity of ET. It was based on similar clinical scales which have been used to support regulatory approval of neurosurgical treatments for severe ET. TETRAS has shown good measurement properties and dynamic range compared to other scales.

We are using the rating of upper limb, or UL, items in the TETRAS as the primary efficacy outcome in this proof-of-concept trial because all ET patients suffer from UL tremor. As the UL items drive most of the score on the overall TETRAS and are more reliably rated than other items on the scale, they are therefore expected to have the best signal to noise ratio. We have established rigorous procedures for training and for blinded scoring of efficacy, including centralized video assessment with randomization of the videos and masking to allow for objective ratings. We have also included the TETRAS performance scale, or TETRAS-PS, (both site and central video rating) and accelerometry as secondary endpoints in the current open-label study to assess consistency of response across different endpoints.

In this study, we are enrolling participants with well-established ET, as defined by the Movement Disorders Society, or MDS, Task Force for Tremor as an isolated tremor syndrome of bilateral UL

action tremor with at least 3 years' duration. Patients were required to have a combined bilateral score of ³10 on the TETRAS UL items as confirmed by site investigator and central video review. This baseline severity provides a clear and measurable dynamic range for detecting a treatment response. Tremor severity will be evaluated before drug, at the end of week one and week two following the administration of PRAX-944 and one week after administration of PRAX-944 has been stopped.

We plan to announce topline data from this Phase 2a trial in .

Preclinical support for advancing PRAX-944

PRAX-944 has been shown preclinically to inhibit all three human T-type calcium channel isoforms, Cav3.1, Cav3.2 and Cav3.3, and has demonstrated high selectivity against L and N-type calcium channels, or Cav1.2 and Cav2.2, respectively, and other key ion channels important for normal physiology, such as the cardiac potassium channel human Ether-à-go-go-Related Gene, or hERG, and the voltage gated sodium channel Nav1.5. Robust selectivity and potency have been demonstrated across both exogenously expressed recombinant channels in a human cell line and naïve channels in isolated dorsal root ganglion, or DRG, neurons from rats using electrophysiological techniques.

HEK CELLS	
Channel	**IC_{50} (nM)**
hCav3.1	**202**
hCav3.2	**240**
hCav3.3	**188**
rCav1.2 (L-Type)	32,000
rCav2.2 (N-Type)	11,000
hNav1.5	100,000
hERG	7,800

RAT DRG NEURONS	
Channel	**IC_{50} (nM)**
T-Type	**50**
N-Type	10,000

Table 15. PRAX-944 is a potent and selective inhibitor of T-type calcium channels.

Consistent with the gatekeeper role of T-type calcium channels in neuronal firing patterns, a gain of function mutation of the T-type calcium channel Cav3.2 leads to pathological burst firing in thalamic neurons in a rat model known as the GAERS model. Administration of PRAX-944 resulted in complete suppression of the pathological burst-firing in thalamic neurons derived from the GAERS model.

We validated the therapeutic potential of PRAX-944 to treat ET using the harmaline-induced tremor model in rats. Administration of harmaline triggers ET-like tremors in experimental animals as well as pathological burst firing throughout the CTC circuit. We observed a large and dose-dependent decrease of harmaline-induced tremor in rats treated with PRAX-944 as compared to vehicle-treated animals, when measured as % increase of tremor from pre-harmaline baseline. This result served to both demonstrate the potential of PRAX-944 in ET and as independent evidence of the critical role of T-type calcium channels in tremor reduction.

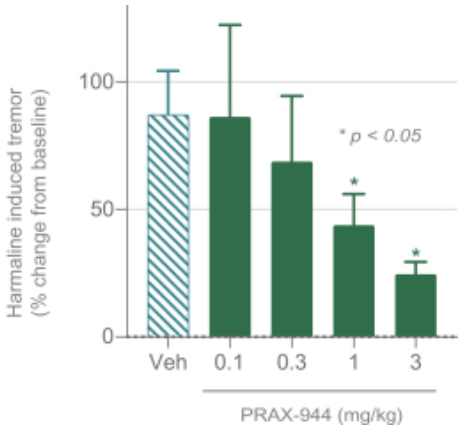


Figure 16. PRAX-944 led to a dose-dependent inhibition of tremors in the rat harmaline model.

EEG as a pharmacodynamic biomarker for dose selection

PRAX-944 robustly and dose-dependently decreased EEG power in the sigma frequency band during NREM sleep in rats. The effect of PRAX-944 on the EEG observed in rats when dosed with PRAX-944 indicates its ability to mediate the blockade of T-type calcium channels in the thalamocortical circuit, suggesting that this effect is a pharmacodynamic biomarker for PRAX-944. Because the doses at which the EEG changes are observed are similar to those that demonstrate efficacy in the harmaline model, we believe that this biomarker can be used to estimate the dose that could be effective in treating ET.

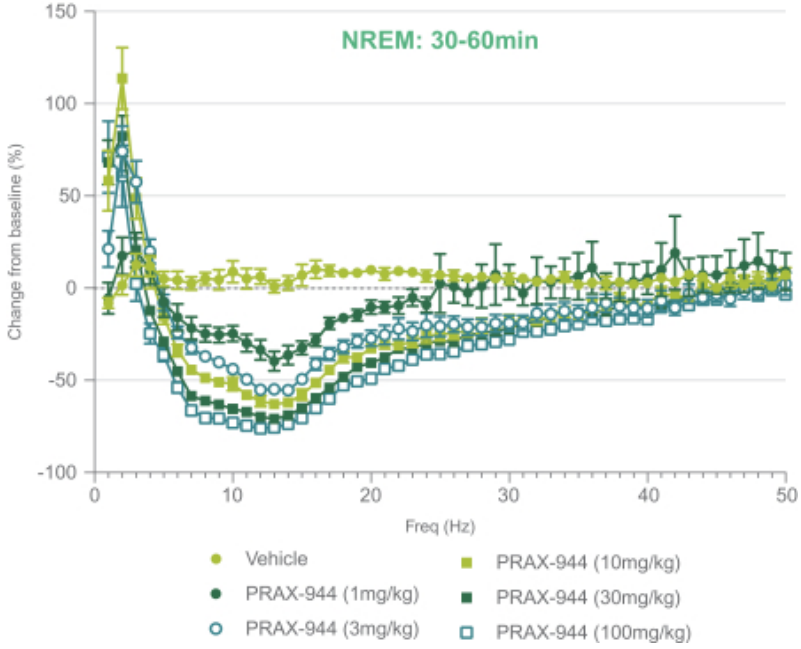


Figure 17. PRAX-944 depressed EEG sigma power during NREM sleep in rats.

RARE DISEASE PORTFOLIO

We are advancing several programs which we believe offer significant therapeutic benefits for rare disease populations over the current standard of care. We believe that all of the programs in our rare disease portfolio have the potential to be both best and first-in-class molecules, have foundational underpinnings in human genetics, utilize translational biomarker tools and have the potential for rapid clinical validation.

Our most advanced rare disease candidate is PRAX-562, which is currently in a Phase 1 trial in adult healthy volunteers in Australia. Its mechanism suggests that PRAX-562 has broad potential to treat many diseases of neuronal hyperexcitability. We are pursuing development in a subset of rare devastating diseases, initially cephalgias and pediatric epilepsies. We believe that this development strategy will enable an efficient path to rapidly demonstrate safety and therapeutic activity in humans and provide a best-in-class treatment option for greatly underserved patients.

The remainder of our current rare disease portfolio consists of precision medicines approaches to address genetically defined populations suffering from Developmental and Epileptic Encephalopathies, or DEEs. DEEs are rare neurologic diseases characterized by early onset (< 2 years of age), frequent seizures, abnormal epileptiform electroencephalographic activity, developmental impairment and resistance to available antiepileptic drugs. Additionally, DEEs are associated with a high mortality rate and comorbidities such as developmental delay in addition to psychiatric and mood disorders, movement disorders, pain and sensory dysfunction and sleep disruptions.

The etiology of DEEs has been revolutionized by recent whole-exome sequencing initiatives that showed over 60 genetic causes of epilepsy. An underlying pathologic feature of many DEEs is the dysregulated neuronal activity leading to hyperexcitability, seizures and associated comorbidities. This phenomenon is observed in many pediatric DEEs with an identified genetic cause, such as SCN8A, SCN2A, KCNT1, KCNQ2, KCNQ1 and STXBP1 epilepsy, as well as epilepsies in which a genetic cause remains unclear, such as Lennox Gastaut Syndrome, or Doose Syndrome. Up to 40% of DEEs are caused by single gene mutations, enabling precision medicine approaches.

Given the overlapping biology, phenotypic presentation and clinical execution considerations, we believe that developing a portfolio of drugs to treat DEEs creates a differentiated body of knowledge and operational synergies across our rare disease portfolio, positioning Praxis as a leader in developing meaningful therapies for this group of patients with devastating clinical needs.

PRAX-562

PRAX-562 is designed as a potential first-in-class, selective, persistent sodium current blocker for the treatment of a broad range of rare, devastating CNS disorders, such as severe pediatric epilepsy and adult cephalgia. We intend to pursue development in a subset of rare diseases, initially Short-lasting Unilateral Neuralgiform headache attacks with Conjunctival injection and Tearing, or SUNCT, and Short-lasting Unilateral Neuralgiform headache with Autonomic symptoms, or SUNA, two rare types of cephalgia and pediatric epilepsies.

In *in-vitro* studies, PRAX-562 selectively blocks persistent sodium currents across all subtypes of sodium channels with minimal effects on the peak sodium current that is critical for the normal physiological function of these channels. In line with this selectivity for persistent current, PRAX-562 has been shown in *ex-vivo* studies to reduce neuronal hyperexcitability without impairing normal neuronal function. This is in contrast to marketed sodium channel blockers which significantly impact normal neuronal function, leading to a narrow therapeutic index.

To date, PRAX-562 has demonstrated efficacy in *in-vivo* models with significantly improved tolerability compared to other sodium channel blockers, suggesting an improved therapeutic index. The

characteristics of PRAX-562 are expected to make it a versatile molecule that we believe can be broadly applied in diseases of hyperexcitability where sodium channel blockers have demonstrated efficacy but poor tolerability.

We have initiated a Phase 1 trial of PRAX-562 in Australia to evaluate the safety, tolerability, PK and effects on an EEG biomarker in up to 129 adult healthy volunteers. We anticipate topline data from this trial in . The clinical development plan for PRAX-562 encompasses exploring the broad potential for the mechanism of action in rare diseases by rapidly identifying proof-of-concept and safety in SUNCT and SUNA and then expanding into a range of rare pediatric DEEs.

Voltage-gated sodium channels, persistent sodium current and neuronal excitability

Voltage-gated sodium channels, or VGSCs, are transmembrane proteins that are required for electrical signaling and therefore communication in neurons. VGSCs respond to changes in the membrane potential and are tightly regulated by their biophysical properties. Upon opening of VGSCs, sodium ions can move into the cell leading to a depolarization and therefore excitation of the neuron. This sodium current is the initiator and driver of neuronal action potentials, or APs, the primary means of electrical signal propagation along the neuron's axon.

The family of VGSCs consists of nine highly related isoforms (Nav1.1 – Nav1.9) with differential tissue distributions and functions. Nav1.1, 1.2 and 1.6 are the major sodium channels expressed in the central nervous system.

Isoform	Gene	Expression
Nav1.1	SCN1A	CNS
Nav1.2	SCN2A	CNS
Nav1.3	SCN3A	CNS/Pancreas
Nav1.4	SCN4A	Muscle
Nav1.5	SCN5A	Heart
Nav1.6	SCN8A	CNS/PNS
Nav1.7	SCN9A	PNS
Nav1.8	SCN10A	PNS
Nav1.9	SCN11A	PNS

CNS: Central Nervous System, PNS: Peripheral Nervous System

Table 18. Sodium Channel Isoforms and tissue distribution.

VGSCs undergo conformational changes that alter their ability to conduct sodium ions (Figure 18) and are triggered to open upon excitation, or depolarization, of the cell membrane allowing sodium ions to enter the neuron. Sodium influx further excites, or depolarizes, the neuron, leading to the opening of even more sodium channels. This series of events can lead to a large peak sodium current underlying the initiation and propagation of neuronal action potentials, or APs, the primary means by which neurons propagate information in the nervous system. To prevent overexcitation of neurons, or hyperexcitability in the form of excessive high frequency AP firing, the majority of sodium channels only open very briefly after activation (1-2 ms), followed by a refractory period of inactivation or non-responsiveness.

However, at membrane potentials below the AP firing threshold, a small subset of sodium channels can remain open for hundreds of milliseconds, carrying the so-called persistent sodium current. Persistent sodium current is present under physiologic conditions where it modulates excitability of neurons and can be significantly increased in pathologic states (Figure 19).

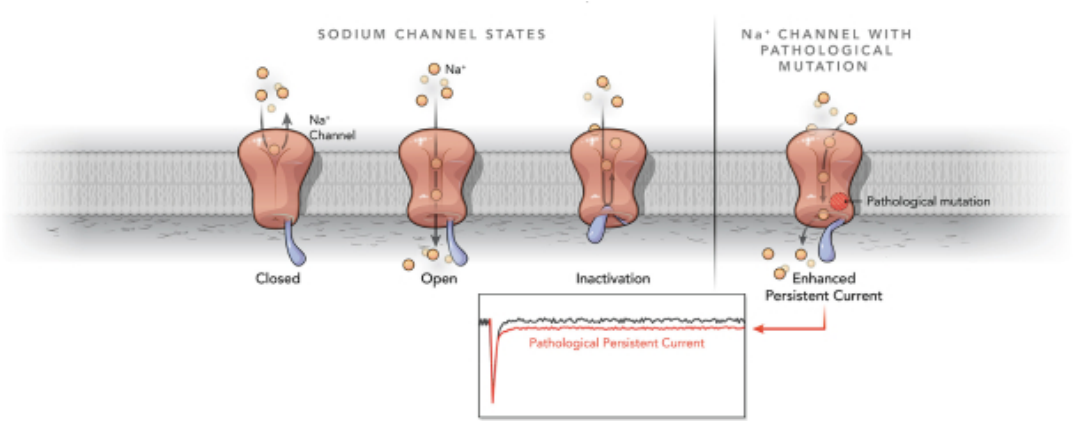


Figure 19. Impact of a pathological mutation on sodium channels.

There are currently more than 15 sodium channel blockers in the market commonly used to treat diseases such as epilepsy, bipolar disorder and pain. While standard of care sodium channel blockers, such as carbamazepine, lamotrigine and phenytoin, inhibit persistent sodium current, they likely also block peak sodium current at therapeutic concentrations, which can cause significant adverse events such as ataxia, drowsiness and dizziness, and therefore have a very narrow Therapeutic Index, or TI.

Genetics of persistent sodium current

In published whole-exome sequencing studies of diverse patient populations, mutations in all voltage gated sodium channel subtypes have been reported as a likely cause of disease. Furthermore, gain-of-function mutations that are associated with disease can cause an increase of persistent sodium current, raising the idea that this might be a critical driver of hyperexcitability in neurologic disorders.

The specific disease that a patient develops depends on both the sodium channel subtype and where the affected sodium channel is expressed. Gain-of-function mutations in SCN2A, or Nav1.2, and SCN8A, or Nav1.6, two of the major sodium channels in the brain, cause early onset epileptic encephalopathies with frequent seizures and developmental delay. Gain-of-function mutations in Nav1.1, Nav1.4, Nav1.5 and Nav1.7 cause familial hemiplegic migraine, myotonia, cardiac arrythmia and severe pain disorders, based on their primary expression in the CNS, muscle, heart and pain pathways, respectively. These channelopathies demonstrate the important role persistent sodium current plays as a modulator of cellular excitability.

Our initial indications for PRAX-562

Developmental and epileptic encephalopathy

Approximately 100,000 children suffer from DEEs in the United States alone, with over two hundred thousand children affected world-wide. An underlying pathologic feature of many DEEs with both known and unknown genetic causes, is the dysregulated neuronal activity leading to hyperexcitability and subsequently to seizure.

Sodium channel blockers have been a critical component of the pharmacological management of seizure related conditions, including epilepsy, for decades. However, current standard of care sodium channel blockers are limited by a narrow therapeutic window and inadequate efficacy. We believe these limitations are largely due to blockage of peak sodium current and disruption of normal neuronal function at or near therapeutic doses and significant off-target activity.

Given the role of persistent current in modulating excitability, we believe that PRAX-562 has the potential to be a broadly efficacious and well-tolerated antiepileptic drug for the treatment of DEEs of both genetic and unknown etiology.

SUNCT and SUNA cephalgias

SUNCT and SUNA cephalgias are devastating primary headache disorders that are part of a specific class of cephalgias known as Short Lasting Unilateral Neuralgiform headaches. These headaches are characterized by severe burning, stabbing and electrical unilateral head pain that is typically 9 to 10 in the Visual Analogue Scale, or VAS, for pain. These headache attacks lasts between one second and ten minutes in duration and can occur up to 600 times per day. SUNCT and SUNA headaches are rare diseases with a prevalence estimated to be 6.6 per 100,000 based on a recent Australian study.

Increased activation of the posterior hypothalamus during SUNCT and SUNA headache attacks indicates that hyperexcitability of central neurons is core to the conditions. Moreover, deep brain stimulation of the posterior inferior hypothalamus effectively controls headache attacks.

SUNCT and SUNA are often refractory to standard migraine and headache treatments, but are highly responsive to intravenous, or IV, infusion of the sodium channel blocker lidocaine. Response under IV lidocaine requires continuous infusion in an inpatient setting and is associated with side effects such as nausea, vomiting and cardiovascular effects, with headache attacks returning in majority of patients within days of IV lidocaine withdrawal. Preventative treatment of SUNCT and SUNA often includes oral sodium channel blocker lamotrigine, but this is limited by partial efficacy, tolerability concerns and the requirement of several weeks of dose-titration to reach therapeutic doses.

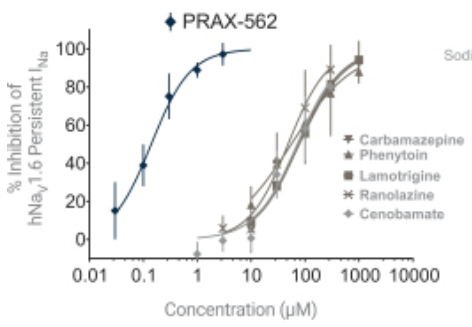
The absence of approved treatments specific to SUNCT and SUNA, combined with high comorbidity and healthcare utilization, substantiates the need for an efficacious, well-tolerated and orally bioavailable sodium channel blocker to treat headache attacks in acute and preventative settings.

PRAX-562 preclinical data

PRAX-562 is a highly differentiated, potent and selective inhibitor of persistent sodium current designed to overcome the limitations of currently available sodium channel blockers. PRAX-562 preclinical studies were designed to test our belief that the block of persistent sodium current is sufficient to demonstrate robust efficacy in animal models of hyperexcitation and that the selective block of persistent sodium current over physiological peak current leads to an improved therapeutic index.

Selective inhibition of persistent sodium channels

In preclinical studies, PRAX-562 is a highly potent inhibitor of persistent sodium current as measured in cell-based assays, in which sodium channel isoforms are heterologously expressed and channel activity is measured via patch clamp electrophysiology. Using electrophysiological voltage protocols, the effect of compounds on a specific channel state (e.g., peak current vs persistent current) can be measured. When compared to other approved sodium channel inhibitors for various neurological indications, PRAX-562 was hundreds of times more potent at inhibiting persistent sodium current. PRAX-562 had an IC50 of 141 nM compared to SOC sodium channel blockers lamotrigine and carbamazepine which had an IC50 of 78,530 nM and 77,520 nM, respectively – a potency difference of over 500-fold. PRAX-562 was ~60 fold selective for inhibiting persistent current over peak current.



		Persistent INa* IC50 (nM)	Ratio of persistent to peak inhibition (Tonic Block)
Praxis selective INaP blockers	PRAX-562	141	60
Sodium Channel Blockers with recent clinical experience	Vixotrigene (BIIB074)	3,676	14
Standard Sodium Channel Blockers	Cenobamate	73,263	23 Project 1,719,000 uM
	Carbamazepine	77,520	30
	Ranolazine	48,600	14
	Mexiletine	55,570	7
	Phenytoin	55,770	n/a**
	Lidocaine	68,230	19
	Lamotrigine	78,530	16
	Lacosamide	833,100	n/a**
	Valproic Acid	<10% @ 1 mM	No inhibition

** solubility concerns

Figure 20. PRAX-562 is approximately 150-fold more potent and two to nine-fold more selective for persistent sodium current than standard sodium channel blockers.

The selective block of persistent sodium current reduces neuronal hyperexcitability without affecting the action potential, or AP, amplitude, which is required for normal neuron function. In mouse brain slice experiments, a hyperexcitable state can be mimicked by artificially depolarizing the neuron using the patch clamp method, which elicits high frequency AP firing. PRAX-562 reduced the neuronal AP firing frequency, an indicator of neuronal excitability, without a significant effect on AP amplitude, an indicator of normal neuronal function, suggesting reduction of hyperexcitability without impacting the ability of the neuron to respond to physiologic stimuli. In comparison, carbamazepine, a SOC sodium channel blocker, at comparable concentrations (relative to the potency in cells heterologously expressing Nav1.6), excessively decreased AP firing almost completely and reduced the amplitude of APs, indicating impairment of normal function.

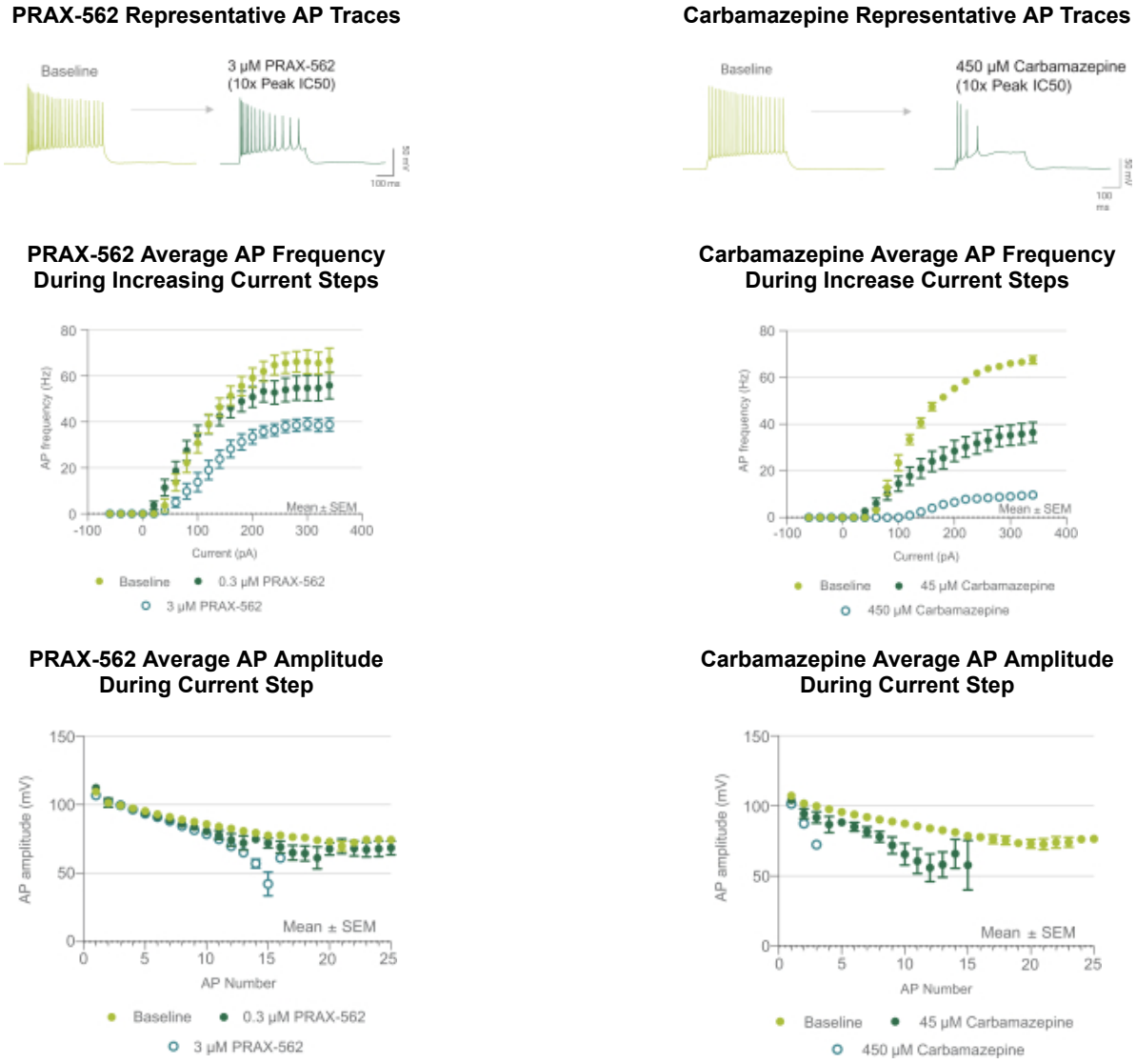


Figure 21. PRAX-562 reduced neuronal hyperexcitability (AP frequency) without impairing normal function (minimal effect on AP amplitude). In contrast, carbamazepine significantly reduced the AP amplitude suggesting impairment of normal function.

Preclinical efficacy, tolerability and EEG pharmacodynamic biomarker

We investigated the preclinical efficacy of PRAX-562 in a maximal electroshock model of epilepsy, or MES model, that has shown good predictive validity for clinical anti-convulsant activity, and compared it to the effects of SOC sodium channel blockers carbamazepine and lamotrigine. To determine how well PRAX-562 is tolerated, we compared its effects on spontaneous locomotor activity, or sLMA, to the effects of carbamazepine and lamotrigine.

PRAX-562 was able to block seizures completely in mice at a dose that does not impair locomotor function (10mg/kg). In contrast, carbamazepine and lamotrigine only achieve full efficacy in this model at doses that also show impairment of locomotion. PRAX-562 at a dose of 2mg/kg, inhibited the epilepsy response to half of its maximum value, or ED_{50}. Inhibition of sLMA required an estimated dose of 44mg/kg to obtain 50 percent inhibition, or TD_{50}.

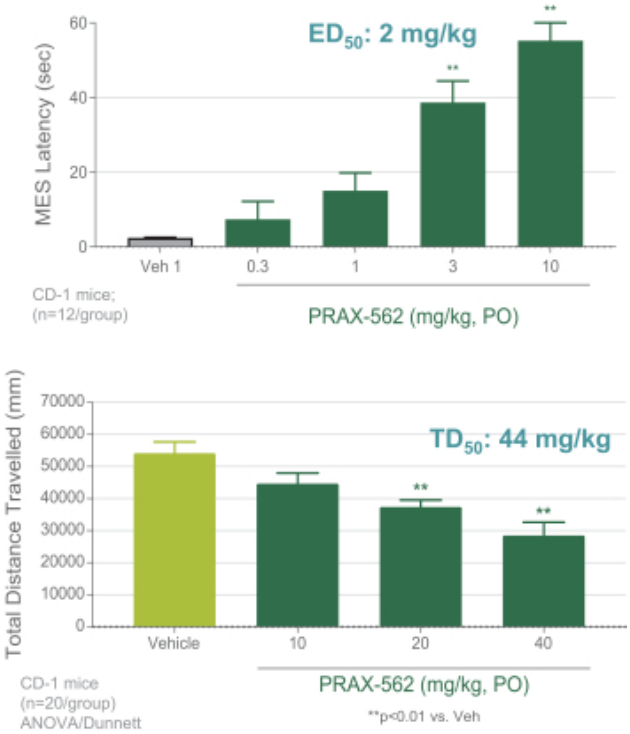


Figure 22. Doses of PRAX-562 resulting in potent anticonvulsant activity were associated with minimal effects on general locomotor activity.

We calculated the therapeutic index, the preclinical tolerability/efficacy ratio, or TI, of each molecule. This ratio is calculated by dividing the plasma and brain concentrations at the dose that reduces locomotion by 50% by the concentrations that reduce seizures by 50%. We found that PRAX-562 had a significantly improved therapeutic index of ~16 fold (based on brain concentrations) and ~17 fold (based on plasma concentrations) compared to the currently prescribed sodium channel blockers carbamazepine and lamotrigine, which had a much lower protective index of three to six-fold.

Molecule	Plasma Therapeutic Index	Brain Therapeutic Index
PRAX-562	**17.2x**	**16.4x**
Carbamazepine	3.4 x	5.9 x
Lamotrigine	6.4 x	4.6 x

Therapeutic Index (TI) = TC_{50}/ EC_{50}

Table 23. Compared to lamotrigine and carbamazepine, PRAX-562 had an increased ratio between drug levels that demonstrated preclinical efficacy versus those that caused toxicity.

The auditory steady state response, or ASSR, is a non-invasive EEG measure of excitatory/inhibitory balance in the brain. This response is elicited with short lasting (2sec) auditory stimuli that lead to brain activity changes that are measured as a 40Hz EEG signature and depend on network activity between excitatory and inhibitory cortical neurons. We believe that persistent current block has the potential to lead to reduced excitability of the network and will be measurable with this endpoint.

Consistent with this hypothesis, dosing normal mice with PRAX-562 led to a dose-dependent decrease in the ASSR amplitude (40 Hz power). This effect was maximal at doses that have robust anticonvulsant effects in the maximal electroshock model.

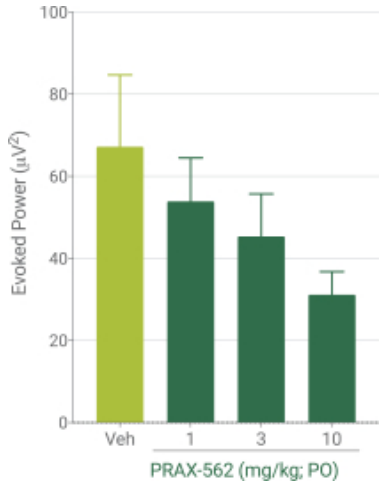


Figure 24: PRAX-562 dose-dependently reduced the 40Hz EEG power of the auditory steady state response in mice.

Together, our data suggest that the selective effects of PRAX-562 on hyperexcitable states without affecting normal neuronal function led to the robust preclinical efficacy and improved tolerability seen in animal models. As shown below, exposures of PRAX-562 that led to biomarker change (ASSR amplitude reduction shown in top row) also demonstrated robust anticonvulsant effects (shown in middle row). Moreover, PRAX-562 has a ~16.4 fold protective index based on the spontaneous locomotor activity (shown in bottom row), which is a significant improvement over reported effects of approved sodium channel blockers. In the figure below, the lower bound of the preclinical efficacy range, EEG and tolerability bars is determined by the brain EC_{50} (preclinical efficacy assays) or TC_{50} (tolerability assay) in a given assay and the upper bound represents the mean brain concentration at the highest dose tested in a given assay.

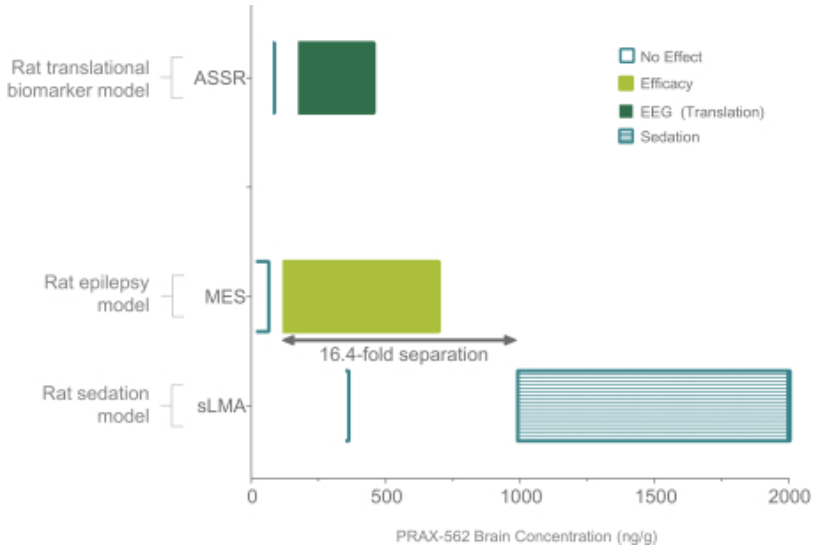


Figure 25. Summary of PRAX-562 preclinical data.

We believe that the profile of PRAX-562 may translate into therapies with the potential for increased clinical efficacy and tolerability across several indications caused by underlying hyperexcitability where standard sodium channel blockers have shown efficacy, albeit with limited tolerability, such as rare pediatric epilepsy and cephalgias like SUNCT/SUNA.

PRAX-562 clinical development in SUNCT and SUNA cephalgias and DEEs

We have initiated a Phase 1 trial in Australia to evaluate the safety, tolerability and pharmacokinetics of single and multiple ascending doses of PRAX-562 in up to 129 adult healthy volunteers. In addition, we plan to use ASSR as a pharmacodynamic biomarker in this trial to determine the doses required to achieve pharmacological blockade of persistent sodium current, which we believe is potentially indicative of efficacy in patients. We anticipate topline data from this trial in .

The clinical development plan for PRAX-562 encompasses exploring the broad potential for the mechanism of action in rare diseases by rapidly identifying proof-of-concept and safety in SUNCT and SUNA and then expanding into a range of rare pediatric DEEs.

Along with our PRAX-562 program, we are developing a portfolio of sodium channel blockers that we plan to advance in other rare neuropsychiatric disorders.

PRAX-222

PRAX-222 is an antisense oligonucleotide, or ASO, that is designed to lower the expression levels of the protein encoded by the gene SCN2A, in patients with gain-of-function, or GOF, SCN2A epilepsy. This program is ongoing under a three-way collaboration with Ionis Pharmaceuticals, Inc., or Ionis, and RogCon Inc., or RogCon. Under the terms of the collaboration agreement, Ionis is responsible for preclinical and IND-enabling toxicology studies and Praxis is responsible for clinical development and commercialization.

SCN2A is the gene that encodes the voltage-gated sodium channel $Na_V1.2$ that is primarily found in excitatory neurons throughout the brain and which plays a critical role in action potential generation

and signaling between neurons. Individuals with gain-of-function mutations in SCN2A develop early-onset epileptic encephalopathy with severe seizures that begin within the first month of life that are often refractory to standard of care antiepileptic medications. SCN2A GOF patients also suffer from significant intellectual disability, movement disorders and in some cases early death due to sudden unexpected death in epilepsy, or SUDEP. It is estimated that there are approximately two-thousand patients worldwide with gain-of-function changes in SCN2A leading to epileptic encephalopathy.

PRAX-222 directly targets the cause of disease by down-regulating Nav1.2 expression, an effect that has demonstrated disease-modifying efficacy in animal models of SCN2A epileptic encephalopathy. In transgenic mice carrying a human GOF SCN2A mutation, we observed a significant, dose-dependent reduction in seizures and increased survival of mice treated with a mouse ASO that down-regulates SCN2A. The survival benefit from the ASO was maintained with repeat dosing. We also observed survival benefits following administration of a mouse ASO to a group of mice after onset of disease and around the time of onset of mortality. This observation suggests that PRAX-222 may have the potential to provide clinical benefits for children after disease onset. The ASO-treated disease model animals demonstrated similar behavior and locomotor activity as wild type animals, suggesting SCN2A knockdown is well-tolerated and that the benefits extend beyond seizure control alone.

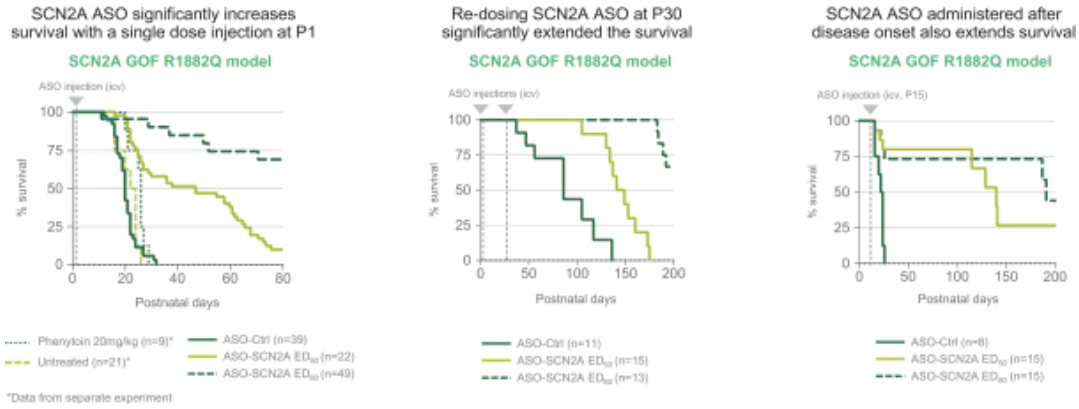


Figure 26. An SCN2A ASO increased survival in a SCN2A gain-of-function mouse model.

PRAX-222 is a highly selective ASO for human SCN2A mRNA that has been discovered by Ionis through extensive preclinical screening and optimization efforts. PRAX-222-treated animals displayed good short term and 8-week tolerability in rats and mice treated at high doses. Administered intrathecally, PRAX-222 was able to reduce SCN2A mRNA transcript in both the cortex and the spinal cord of non-human primates to levels that are expected to be therapeutic.

PRAX-222 is currently undergoing evaluation in IND-enabling toxicology studies. We intend to file an IND in to pursue clinical development in SCN2A GOF epilepsy.

KCNT1 Program

We are currently identifying small molecule inhibitors of the sodium-activated potassium channel encoded by the gene KCNT1 for the treatment of KCNT1 GOF epilepsy. Potassium channels encoded by the KCNT1 gene play a key role in regulating neuronal AP firing. Gain-of-function KCNT1 mutations promote neuronal hyperexcitability, resulting in severe early onset epilepsy with continuous seizures

and severe developmental delay, affecting thousands of patients worldwide. KCNT1 GOF epilepsy is often refractory to conventional treatment approaches. Anticonvulsants, such as stiripentol, benzodiazepines, levetiracetam and ketogenic diet, have all demonstrated limited efficacy.

Genetically lowering KCNT1 expression in transgenic mice carrying a KCNT1 human GOF mutation has been reported to result in disease modifying preclinical efficacy including seizure reduction, improved cognitive function and survival benefit. Through chemical optimization of the potency and pharmacokinetic properties of hits from a high-throughput screen, we have identified novel small molecule inhibitors of KCNT1. These inhibitors restored normal action potential firing *in-vitro* in KCNT1 GOF mutant neurons and reduce seizure and abnormal interictal spikes *in-vivo* in transgenic mice carrying a KCNT1 human GOF mutation, recapitulating the reported disease modifying preclinical efficacy demonstrated by genetic tools.

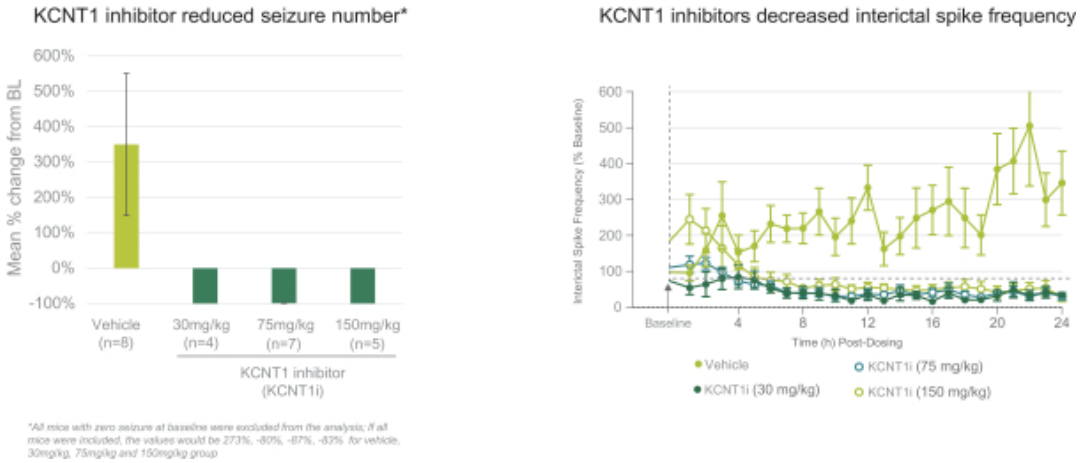


Figure 27. A KCNT1 inhibitor eliminated the occurrence of seizures in a KCNT1 transgenic mouse model and suppressed interictal spikes (or abnormal electrographic discharges observed between seizures) as detected by EEG

We are continuing to optimize the chemical structures of our molecules targeting KCNT1 channels and expect to select a development candidate in .

Competition

The biopharmaceutical industry is characterized by rapidly advancing technologies, strong competition and an emphasis on proprietary products. While we believe that our technology, knowledge, experience and scientific personnel provide us with competitive advantages, we face substantial competition from many different sources, including large and small pharmaceutical and biotechnology companies, academic research institutions, governmental agencies and public and private institutions.

Any product candidates that we successfully develop and commercialize will compete with currently approved therapies and new therapies that may become available in the future. Key product features that would affect our ability to effectively compete with other therapeutics include the efficacy, safety, convenience, cost, effectiveness of promotional support and intellectual property protection of our products. Our competitors fall primarily into the following groups of treatment:

- $GABA_A$ receptor modulator programs in development targeting MDD, including that of SAGE Therapeutics, as well as other programs in clinical development targeting other mechanisms of action and approved therapies such as SSRIs.
- T-type calcium channel inhibitor programs in development targeting ET, including that of Jazz Pharmaceuticals, as well as other programs in clinical development targeting other mechanisms of action and approved therapies, such as propranolol, and off-label therapies, such as primidone.
- Sodium channel blocker programs in development for DEEs, including those of SK-Pharma and Xenon Pharmaceuticals, as well as other programs in clinical development targeting other mechanisms of action and approved therapies including other existing ion channel blockers.
- We are not aware of any development programs targeting SUNCT and SUNA, but we may face competition from off-label therapies such as intravenous lidocaine.

Many of our competitors have substantially greater financial resources, expertise and capabilities in research and development, the regulatory approval process, manufacturing and marketing than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through M&A activity and sizeable collaborative arrangements with established companies.

Intellectual Property

We strive to protect and enhance the proprietary technology, inventions and improvements that are commercially important to the development of our business, including seeking, maintaining and defending patent rights, whether developed internally or licensed from third parties. We also rely on trade secrets relating to our proprietary technology platform and on know-how, continuing technological innovation and in-licensing opportunities to develop, strengthen and maintain our proprietary position in the field of neuroscience that may be important for the development of our business. We additionally may rely on regulatory protection afforded through data exclusivity, market exclusivity and patent term extensions, where available.

Our commercial success may depend in part on our ability to: obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business; defend and enforce our patents; preserve the confidentiality of our trade secrets; and operate without infringing the valid enforceable patents and proprietary rights of third parties. Our ability to stop third parties from making, using, selling, offering to sell, or importing our products may depend on the extent to which we have rights under valid and enforceable licenses, patents, or trade secrets that cover these activities. In some cases, enforcement of these rights may depend on third party licensors. With respect to both licensed and company-owned intellectual property, we cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our commercial products and methods of manufacturing the same.

$GABA_A$ receptor positive allosteric modulators

We own six patent families directed to $GABA_A$ receptor positive allosteric modulators. One family discloses and claims salts and polymorphs of PRAX-114, including the lead clinical candidate citrate salt of PRAX-114. A U.S. patent covering the clinical candidate salt has granted in the U.S. (U.S.

10562930) and PCT, EP, JP and TW applications are pending. Patents issuing from applications in this family would expire in the United States on July 19, 2039 and on August 30, 2039 in other countries, not taking into account any potential patent term adjustment or extension that may be available in the future. A second family covers various methods of use, including treatment of the current lead clinical indication, major depressive disorder, with PRAX-114. This patent family has one pending PCT application and two pending U.S. utility applications and two pending U.S. provisional applications. The expected statutory expiration date of patents issuing from applications in this family is December 16, 2039. A third family is directed to methods of treating various perimenopausal symptoms with PRAX-114. This family has one pending PCT application and an expected statutory expiration date of March 4, 2040. Three additional U.S. provisional applications have been filed covering combinations of GABA-PAMs (including PRAX-114) with NMDA antagonists, NMDA Negative Allosteric Modulators or NMDA partial agonists (filed Oct. 2, 2019); deuterated forms of PRAX-114 (filed Feb. 18, 2020); and methods of treating adjustment disorder with PRAX-114 (filed July 2, 2020).

T-type Calcium channel blockers

We own four patent families directed to T-type Calcium channel blockers. One family discloses and claims certain T-type calcium channel modulators, including PRAX-944. This patent family is issued in U.S., AU, CA, CN, EP, HK, IL, JP, KR and ZA and is pending in BR, HK, IL and KR. The statutory expiration for patents issuing from this family in the United States is April 8, 2029 and June 2, 2029 in foreign jurisdictions. A second family is directed to methods of use of certain T-type calcium channel modulators, including PRAX-944, in treating disease such as epilepsy. This patent family is pending in the United States and the statutory expiration for any patent issuing from this family is December 21, 2037. A third patent family is directed to certain pharmaceutical formulations of PRAX-944 and methods of use in treating disorders such as essential tremor. This family is composed of three provisional applications filed respectively on July 11, 2019, November 13, 2019 and January 9, 2020. A fourth family is directed to methods of use of PRAX-944. This family is a provisional application filed April 29, 2020.

Persistent sodium current blockers

We own twenty patent families directed to persistent sodium current blockers including five patent families that relate to our PRAX-562 program and fifteen families related to other persistent sodium current blockers. Additionally, we have in-licensed one patent family.

Regarding the five families directed to our PRAX-562 program, one family discloses and claims certain persistent sodium current blockers, including PRAX-562, and methods of use in treating diseases such as pediatric epilepsy. This family is pending as a PCT, having a 30-month national phase deadline of November 30, 2020 and is also pending in AR and TW. The statutory expiration for any patent issuing from this family is May 30, 2039. A second family discloses other persistent sodium current blockers and generically claims PRAX-562. This family also claims methods of use of the claimed compounds in treating diseases such as pediatric epilepsy. This patent family is pending in multiple jurisdictions, including US, AU, BR, CA, CN, EA, EP, HK and JP. The statutory expiration for any patent issuing from this family is November 28, 2037. A third family is directed to pharmaceutical formulations of PRAX-562 and methods of use in treating diseases such as pediatric epilepsy. This family has three provisional applications filed respectively on November 27, 2019, March 30, 2020 and May 21, 2020. A fourth family is directed to methods of making PRAX-562. This family is a provisional application filed November 27, 2019. A fifth family is directed to methods of use of persistent sodium current blockers, including PRAX-562, in treating diseases such as cephalgia, SUNCT and SUNA. This family is a provisional application filed March 30, 2020.

The remaining fifteen patent families are directed to a portfolio of sodium channel blockers that we plan to advance in other neuropsychiatric disorders. Fifteen patent families disclose and claim persistent sodium current blockers of various core structures and methods of use in treating diseases

such as pediatric epilepsy, which include nine families pending in the United States (the statutory expiration for any patent issuing from these families range from November 28, 2037 to May 29, 2040), one family pending as a PCT, having a 30-month national phase deadline of March 28, 2021 (the statutory expiration for any patent issuing from this family is September 27, 2039) and six families pending as provisional applications filed between November 26, 2019 and March 30, 2020. One patent family is directed to use of eleclazine and related compounds. This patent family is pending in US. The statutory expiration for any patent issuing from this family is May 16, 2038. One family is directed to methods of use of certain persistent sodium current blockers in treating diseases such as cephalgia, SUNCT and SUNA. This family is a provisional application filed March 30, 2020.

We have exclusively in-licensed one patent family directed to additional persistent sodium current blockers. This family is owned by Gilead. This family has claims directed to certain persistent sodium current blockers and methods of use. This patent family is issued in US, AU, BO, CA, CN, EA, EP, HK, MO, NZ and TW and is pending in PK and VE. The statutory expiration for any patent issuing from this family is between July 22, 2030 and July 27, 2030, not taking into account any potential patent term adjustment or extension that may be available in the future.

KCNT1 blockers

We own 13 patent families directed to KCNT1 blockers including twelve families related to our KCNT1 program and one family related to antisense oligonucleotides.

Twelve patent families are directed to our KCNT1 program and disclose and claims small molecule KCNT1 blockers and methods of use in treating diseases such as epilepsy, including epilepsy having certain KCNT1 mutations. Two families are pending as a PCT, having a 30-month national phase deadline of November 3, 2021. The statutory expiration for any patent issuing from these two families is May 1, 2040. Ten families are provisional applications filed between February 28, 2020 to March 23, 2020.

One family is directed to certain antisense oligonucleotides and methods of use in treating diseases such as epilepsy, including epilepsy having certain KCNT1 mutations. This family is pending as a PCT, having a 30-month national phase deadline of June 20, 2021. The statutory expiration for any patent issuing from this family is December 20, 2039.

SCN2A downregulation

We have exclusively in-licensed two patent families directed to our PRAX-222 program. These patent families are owned by RogCon. These families disclose and claim certain antisense oligonucleotides targeting SCN2A and methods of use in treating diseases such as epilepsy, including epilepsy having certain SCN2A mutations. One family is pending in the United States and the statutory expiration for any patent issuing from this family is August 6, 2039. A second family is pending as a PCT, having a 30-month national phase deadline of February 20, 2021. The statutory expiration for any patent issuing from this family is August 20, 2039.

License Agreements

License Agreement with RogCon

In September 2019, we and RogCon entered into a Cooperation and License Agreement, or the RogCon Agreement, to collaborate to develop antisense oligonucleotide development candidates for the treatment of epilepsy caused by mutations of the SCN2A gene. In December 2018, we entered into an agreement with RogCon to advance to them a fully refundable deposit of up to $1.0 million while the RogCon Agreement was being negotiated. Under the RogCon Agreement, RogCon granted us, subject to a concurrent license grant of certain rights to Ionis, an exclusive, worldwide license under RogCon's intellectual property to research, develop and commercialize products for the treatment of all forms of

epilepsy and/or neurodevelopmental disorders in each case caused by any mutation of the SCN2A gene. Under the RogCon Agreement, we will conduct, at our own cost and expense, the research and development activities assigned to us under the research plan set out in the Research Collaboration, Option and License Agreement with Ionis. Under the terms of the RogCon Agreement, RogCon is eligible to receive a milestone payment of $3.0 million as well as a percentage of net profits in the low-double-digits. The $3.0 million milestone payment will become due when the first profit share payment has become due and certain contingent payments have become payable to Ionis under our collaboration agreement with Ionis. As part of the RogCon Agreement, we agreed to provide up-front consideration of $2.1 million, consisting of a $1.0 million deposit, $0.7 million in cash reimbursements for certain historical costs previously incurred by RogCon and $0.4 million for the retirement of existing loan balances as of September 11, 2019.

Subsequent to September 11, 2019, we will reimburse RogCon for its out-of-pocket costs incurred for activities performed under the RogCon Agreement. We expense these costs as incurred as research and development. Since the acquisition date, we expensed $0.1 million for the reimbursement of RogCon's out-of-pocket costs in the year ended December 31, 2019.

Additionally, RogCon has agreed to certain defined exclusivity obligations. The RogCon Agreement, unless earlier terminated, will continue until the latest of: (i) the expiration of all patent rights within RogCon patents, (ii) we certify we have abandoned the research, development and commercialization of product with no intention to re-establish such activities and (iii) no third party is obligated to pay any amounts that comprise net sublicense revenue. Either party may terminate the RogCon Agreement for material breach or insolvency of the other party. Additionally, we may terminate for convenience with prior written notice to RogCon. Upon termination by either party, all rights and licenses granted by RogCon to us will revert back to RogCon.

License Agreement with Purdue

In December 2017, we and Purdue Neuroscience Company, or Purdue, entered into a license agreement, or the Purdue Agreement, pursuant to which we were granted exclusive rights under certain Purdue know-how to research, develop and commercialize pharmaceutical products concerning a $GABA_A$ positive allosteric modulator. We are obligated to make future milestone payments based on the achievement of specified development and sales milestones up to $33.0 million. Additionally, under the Purdue Agreement, we were obligated to sell to Purdue $0.6 million of our Series B Preferred Stock in connection with our Series B financing. In addition, as consideration for the license obtained, we issued Purdue the anti-dilution obligation to ensure Purdue's ownership remained at a specified percentage throughout the Series B financing. Further, we are obligated to pay to Purdue a royalty percentage in the low single-digits of net sales of each licensed product for a certain length of time from the date of the first commercial sale of such product.

The Purdue Agreement will remain in effect until the expiration of our royalty obligation for all licensed products. Either us or Purdue may terminate the agreement in the event of a material breach by the other party and such party fails to cure such breach within a certain period of time. Either party may voluntarily terminate the agreement with prior notice. If the agreement is voluntarily terminated by Purdue, our license rights will survive such termination and such rights will become fully paid, perpetual and irrevocable. Purdue may also terminate in the event of our insolvency.

Ionis Collaboration Agreement

In September 2019, we and Ionis entered into a Research Collaboration, Option and License Agreement, or the Ionis Agreement, to discover and develop antisense oligonucleotides to treat forms of epilepsy caused by mutations of the SCN2A gene. Pursuant to the Ionis Agreement, we and Ionis will each conduct certain research activities and Ionis will be responsible for identifying a development

candidate and conducting an IND-enabling toxicology study. The design of the IND-enabling toxicology study will be prepared and mutually agreed to by us and Ionis. We are obligated to reimburse any out-of-pocket costs incurred by Ionis related to research activities, identification of a development candidate and conducting IND-enabling studies. We hold an exclusive option, which we may exercise following the results of the IND-enabling toxicology study, to obtain the rights and license to further develop and commercialize a development candidate in the field of epilepsy and neurodevelopmental disorders caused by any mutation of the SCN2A gene, other than a severe type of epilepsy. If we exercise such option, Ionis will be eligible to receive additional payments from us, including a license fee, development and other milestone payments and a double-digit percentage of royalties on net product sales worldwide.

The Ionis Agreement will continue in full force and effect until the expiration of all payment obligations to Ionis, unless terminated earlier by either party. Either party may terminate the agreement upon material breach or insolvency of the other party or if Ionis is unable to identify a development candidate. Praxis is able to terminate the Ionis Agreement for convenience with prior written notice. Ionis may terminate if we fail to achieve certain performance milestones or Ionis' failure to identify a development candidate. Upon termination by us for convenience, we will stop selling all products, subject to certain wind-down provisions and all products will revert back to Ionis.

Manufacturing

We do not own or operate, and currently have no plans to establish, any manufacturing facilities. We currently source all of our nonclinical and clinical compound supply through third-party contract development and manufacturing organizations, or CDMOs.

For clinical supply, we use CDMOs who act in accordance with the FDA's current Good Manufacturing Practices, cGMP, for the manufacture of drug substance and product. We expect to rely on third parties for our manufacturing processes and the production of all clinical supply drug substance and drug product and currently expect to continue to do so for commercial supplies of our product candidates, if approved. We use additional contract manufacturers to fill, label, package, store and distribute our investigational drug products and currently expect to continue to do so for commercial supplies of our product candidates, if approved. It is our intent to identify and qualify additional manufacturers to provide active pharmaceutical ingredient and fill-and-finish services prior to submission of an NDA to the FDA for any product candidates that complete clinical development.

Government Regulation

The FDA and comparable regulatory authorities in state and local jurisdictions and in other countries impose substantial and burdensome requirements upon companies involved in the clinical development, manufacture, marketing and distribution of prescription drugs, such as those we are developing. These agencies regulate, among other things, the research and development, testing, manufacture, quality control, safety, effectiveness, labeling, storage, record keeping, approval, advertising and promotion, distribution, post-approval monitoring and reporting, sampling and export and import of drug products and product candidates. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources.

U.S. government regulation of drug products

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. The FDA also regulates biological products under the FDCA and the Public Health Service Act, or PHSA. If we advance clinical development of a biologic candidate in the future, these development activities will be subject to additional regulatory requirements specific to biologics. Failure to comply with the applicable U.S. requirements at any time during the product

development process, approval process or after approval, may subject an applicant to a variety of administrative or judicial sanctions, such as the FDA's refusal to approve pending NDAs withdrawal of an approval, imposition of a clinical hold, issuance of warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties brought by the FDA and the Department of Justice, or DOJ, or other governmental entities.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- Completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's good laboratory practice, or GLP, regulations;
- Submission to the FDA of an IND which must become effective before human clinical trials may begin;
- Approval by an independent institutional review board, or IRB, at each clinical site before each trial may be initiated;
- Performance of adequate and well-controlled human clinical trials in accordance with good clinical practice, or GCP, requirements to establish the safety and efficacy of the proposed drug product for each indication;
- Submission to the FDA of an NDA;
- Satisfactory completion of an FDA advisory committee review, if applicable;
- Satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with current good manufacturing practice, or cGMP, requirements and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- Satisfactory completion of FDA audits of clinical trial sites to assure compliance with GCPs and the integrity of the clinical data;
- Payment of user fees and securing FDA approval of the NDA, including agreement to compliance with any post-approval requirements; and
- Compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and the potential requirement to conduct post-approval studies.

Preclinical studies

Before testing any drug or biological product candidate, including our product candidates, in humans, the product candidate must undergo rigorous preclinical testing. Preclinical studies generally include laboratory evaluation of product chemistry, formulation and stability, as well as animal studies to assess potential toxicity, which support subsequent clinical testing. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data and any available clinical data or literature and a proposed clinical protocol, among other things, to the FDA as part of an IND. An IND is a request for authorization from the FDA to administer an investigational product to humans and must become effective before human clinical trials may begin.

Clinical trials

Clinical trials involve the administration of the investigational new drug to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the parameters to be used in monitoring safety and the effectiveness criteria to

be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND.

In addition, an IRB at each institution participating in the clinical trial must review and approve the plan for any clinical trial before it initiates at that institution. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their www.clinicaltrials.gov website. Information related to the product, patient population, phase of investigation, study sites and investigators and other aspects of the clinical trial is made public as part of the registration of the clinical trial. Sponsors are also obligated to disclose the results of their clinical trials after completion. Disclosure of the results of these trials can be delayed in some cases for up to two years after the date of completion of the trial.

An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to initiate. Additionally, FDA will review any data from clinical trials conducted outside the United States when determining whether to allow an IND to proceed in the U.S. Specifically, FDA's acceptance of data from trials conducted outside of the U.S. is subject to certain conditions, including that the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with GCPs; the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful; and that the trials are conducted in compliance with all applicable U.S. laws and regulations. Clinical holds also may be imposed by the FDA at any time before or during studies due to safety concerns or non-compliance.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined:

- Phase 1: The drug is initially introduced into healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness.
- Phase 2: The drug is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.
- Phase 3: The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product, and to provide adequate information for the labeling of the product.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. Phase 1, Phase 2 and Phase 3 trials may not be completed successfully within any specified period, or at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution for a variety of reasons, including if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients.

Post-approval trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long-term safety follow up. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA.

Concurrent with clinical trials, companies usually complete additional animal studies and also must develop additional information about the chemistry and physical characteristics of the drug or biologic as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product and, among other things, companies must develop methods for testing the identity, strength, quality and purity of the final product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidates do not undergo unacceptable deterioration over their shelf life.

Marketing application submission and FDA review and approval

Assuming successful completion of the required clinical testing, the results of the preclinical and clinical studies, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. In most cases, the submission of an NDA is subject to a substantial application user fee. Under the goals and policies agreed to by the FDA under the Prescription Drug User Fee Act, or PDUFA, the FDA has ten months from the date of "filing" of a standard NDA for a new molecular entity in which to complete its initial review and respond to the applicant, and six months from the filing date for priority applications. The FDA does not always meet its PDUFA goal dates, and the review process can be extended by FDA requests for additional information or clarification and a sponsor's process to respond to such inquiries. This FDA review typically takes twelve months from the date the NDA is submitted to FDA (for a standard review) because the FDA has approximately two months, or 60 days, after submission to make a "filing" decision on whether to accept an NDA for review.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review and informs the sponsor by the 74th day after the FDA's receipt of the submission whether an application is sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product's continued safety, quality and purity.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP requirements.

Additionally, the FDA may refer any application to an advisory committee, including applications for novel drug candidates that present difficult questions of safety or efficacy. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, which reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. The FDA also may require submission of a risk evaluation and mitigation strategy, or REMS, plan, if it determines that a REMS is necessary to ensure that the benefits of the drug outweigh its risks and to assure the safe use of the drug product. The REMS plan could include medication guides, physician communication plans, assessment plans and/or elements to assure safe use, such as restricted distribution methods, patient registries or other risk minimization tools. The FDA determines the requirement for a REMS, as well as the specific

REMS provisions, on a case-by-case basis. If the FDA concludes a REMS plan is needed, the sponsor of the NDA must submit a proposed REMS. The FDA will not approve the NDA without a REMS, if required.

In addition, under the Pediatric Research Equity Act of 2003, or PREA, as amended and reauthorized, certain NDAs or supplements to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue either an approval letter or a complete response letter, or CRL. An approval letter authorizes commercial marketing of the drug with specific prescribing information and for specific indications. A CRL generally outlines the deficiencies in the submission and contains a statement of specific conditions that must be met in order to secure final approval of the NDA; it may require additional clinical or preclinical testing and/or other significant and time-consuming requirements related to clinical trials, preclinical studies or manufacturing in order for FDA to reconsider the application. If a CRL is issued, the applicant may choose to either resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application. If and when those deficiencies have been addressed to the FDA's satisfaction, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in response to an issued CRL in either two or six months depending on the type of information included. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Orphan drug designation and exclusivity

Under the Orphan Drug Act, the FDA may designate a drug product as an "orphan drug" if it is intended to treat a rare disease or condition (generally meaning that it affects fewer than 200,000 individuals in the United States, or more in cases in which there is no reasonable expectation that the cost of developing and making a drug product available in the United States for treatment of the disease or condition will be recovered from sales of the product). A company must request orphan product designation before submitting an NDA. If the request is granted, the FDA will disclose the identity of the therapeutic agent and its potential use. Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product with orphan status receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will receive orphan product exclusivity. Orphan product exclusivity means that the FDA may not approve any other applications for the same product for the

same indication for seven years, except in certain limited circumstances. If a drug or drug product designated as an orphan product ultimately receives marketing approval for an indication broader than what was designated in its orphan product application, it may not be entitled to exclusivity. Orphan exclusivity will not bar approval of another product under certain circumstances, including if a subsequent product with the same active ingredient for the same indication is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care, or if the company with orphan drug exclusivity is not able to meet market demand. Further, the FDA may approve more than one product for the same orphan indication or disease as long as the products contain different active ingredients. Moreover, competitors may receive approval of different products for the indication for which the orphan product has exclusivity or obtain approval for the same product but for a different indication for which the orphan product has exclusivity.

Fast track, breakthrough therapy and priority review designations

The FDA is authorized to designate certain products for expedited development or review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs include fast track designation, breakthrough therapy designation and priority review designation.

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life threatening disease or condition and demonstrates the potential to address unmet medical needs for the condition. Fast track designation provides opportunities for more frequent interactions with the FDA review team to expedite development and review of the product. The FDA may also review sections of the NDA for a fast track product on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the application, the FDA agrees to accept sections of the application and determines that the schedule is acceptable and the sponsor pays any required user fees upon submission of the first section of the application. The sponsor can request the FDA to designate the product for fast track status any time before receiving NDA approval, but ideally no later than the pre-NDA meeting. Fast track designation may be withdrawn by the sponsor or rescinded by the FDA if the designation is no longer supported by data emerging in the clinical trial process.

In addition, with the enactment of FDASIA in 2012, Congress created a new regulatory program for product candidates designated by FDA as “breakthrough therapies” upon a request made by IND sponsors. A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over currently approved therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. If the FDA designates a breakthrough therapy, it may take actions appropriate to expedite the development and review of the application, which may include holding meetings with the sponsor and the review team throughout the development of the therapy; providing timely advice to, and interactive communication with, the sponsor regarding the development of the drug to ensure that the development program to gather the nonclinical and clinical data necessary for approval is as efficient as practicable; involving senior managers and experienced review staff, as appropriate, in a collaborative, cross-disciplinary review; assigning a cross-disciplinary project lead for the FDA review team to facilitate an efficient review of the development program and to serve as a scientific liaison between the review team and the sponsor; and considering alternative clinical trial designs when scientifically appropriate, which may result in smaller trials or more efficient trials that require less time to complete and may minimize the number of patients exposed to a potentially less efficacious treatment. Breakthrough therapy designation comes with all of the benefits of fast track designation, which means that the sponsor may file sections of the NDA for review on a rolling basis if certain conditions are satisfied, including an agreement with the FDA on the proposed

schedule for submission of portions of the application and the payment of applicable user fees before the FDA may initiate a review.Finally, the FDA may designate a product for priority review if it is a drug that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA determines at the time that the marketing application is submitted, on a case-by-case basis, whether the proposed drug represents a significant improvement when compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting drug reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, or evidence of safety and effectiveness in a new subpopulation. A priority review designation is intended to direct overall attention and resources to the evaluation of such applications and to shorten the FDA's goal for taking action on a marketing application from ten months to six months for an NDA for a new molecular entity from the date of filing. If criteria are not met for priority review, the application for a new molecular entity is subject to the standard FDA review period of ten months after FDA accepts the application for filing. Priority review designation does not change the scientific/medical standard for approval or the quality of evidence necessary to support approval.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or the time period for FDA review or approval may not be shortened. Furthermore, fast track designation, priority review and breakthrough therapy designation do not change the standards for approval and may not ultimately expedite the development or approval process.

Accelerated approval pathway

A drug product may also be eligible for accelerated approval if it is designed to treat a serious or life-threatening disease or condition and provides a meaningful therapeutic benefit over existing treatments. Such products can be approved on the basis of adequate and well-controlled clinical trials establishing an effect on either a surrogate endpoint that is reasonably likely to predict clinical benefit or on an intermediate clinical endpoint that can be measured earlier than irreversible morbidity or mortality, or IMM, that is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity, or prevalence of the disease or condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require that a sponsor of a drug receiving accelerated approval perform adequate and well-controlled post-marketing clinical trials to verify and describe the predicted effect on IMM or other clinical endpoint. Drugs granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval.

In addition, all promotional materials for products approved under the accelerated approval program are subject to prior review by the FDA, a requirement that could adversely impact the timing of the commercial launch of the product. FDA may withdraw approval of a drug or indication approved under accelerated approval if, for example, the confirmatory trial fails to verify the predicted clinical benefit of the product.

U.S. marketing and data exclusivity

Market exclusivity provisions under the FDCA can delay the submission or the approval of certain follow-on drug applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to gain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an Abbreviated New Drug Application, or ANDA, or a 505(b)(2) NDA submitted by another company for a generic or follow-on version of the protected drug product, respectively, where the applicant does not own or have a legal right of

reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement.

The FDCA also provides three years of data exclusivity when an NDA or a supplement to an existing NDA, includes new clinical investigations, other than bioavailability studies, conducted or sponsored by the applicant that are deemed by the FDA to be essential to the approval of the application, for example, new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs or follow-on 505(b)(2) NDAs if the protected clinical data are not referenced. Five-year and three-year exclusivity will not delay the submission or approval of a stand-alone NDA submitted under section 505(b)(1) of the FDCA. However, an applicant submitting a stand-alone NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness, if applicable.

Pediatric exclusivity is another type of regulatory market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing regulatory exclusivity periods. This six-month exclusivity may be granted based on the voluntary completion of a pediatric trial in accordance with an FDA-issued “Written Request” for such a trial.

Patent term restoration

Depending upon the timing, duration and specifics of FDA approval of our drug product candidates, some of our U.S. patents may be eligible for limited patent term extension. These patent term extensions permit a patent restoration term of up to five years as compensation for any patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the drug product’s approval date. The patent term restoration period is generally one-half the time between the effective date of an IND and the submission date of an NDA, plus the time between the submission date of an NDA and the approval of that application. Only one patent applicable to an approved drug is eligible for the extension and the extension must be applied for prior to expiration of the patent. The United States Patent and Trademark Office, or the USPTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration.

Post-approval requirements

Following approval of a new prescription drug product, the manufacturer and the approved drug are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to monitoring and recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs must be promoted by a manufacturer and any third parties acting on behalf of a manufacturer only for the approved indications and in a manner consistent with the approved label for the product. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses and a company that is found to have improperly promoted off-label uses may be subject to significant liability. After approval, most changes to the approved product, such as adding new indications or other labeling claims or changes to the manufacturing processes or facilities, are subject to prior FDA review and approval. There are continuing, annual user fee requirements for any marketed products and the establishments where such products are manufactured, as well as new application fees for supplemental applications with clinical data.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies and are

subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP requirements and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval of a drug is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- Restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- Fines, warning letters or other enforcement-related letters or clinical holds on post-approval clinical trials;
- Refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or suspension or revocation of product approvals;
- Product seizure or detention, or refusal to permit the import or export of products; and
- Injunctions or the imposition of civil or criminal penalties.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, which regulates the distribution of drugs and drug samples at the federal level, and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution. From time to time, new legislation and regulations may be implemented that could significantly change the statutory provisions governing the approval, manufacturing and marketing of products regulated by the FDA. It is impossible to predict whether further legislative or regulatory changes will be enacted, or FDA regulations, guidance or interpretations changed or what the impact of such changes, if any, may be.

Other healthcare laws and regulations

Healthcare providers, physicians and third party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any drug products for which we obtain marketing approval. Our current and future arrangements with third party payors, customers, healthcare providers, physicians and others, in connection with the clinical research, sales, marketing and promotion of products, once approved, and related activities, may expose a pharmaceutical manufacturer to broadly applicable fraud and abuse and other healthcare laws and regulations. In particular, the research of our product candidates, as well as the promotion, sales and marketing of healthcare items and services and certain business arrangements in the healthcare industry, are subject to extensive laws designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, structuring and commission(s), certain customer incentive programs and other business or financial arrangements.

The applicable federal, state and foreign healthcare laws and regulations that may affect our ability to operate include, but are not limited to:

- the U.S. federal Anti-Kickback Statute, which makes it illegal for any person or entity, including a prescription drug manufacturer (or a party acting on its behalf), to knowingly and willfully solicit, receive, offer or pay any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual, or the purchase, lease, order, arrangement, or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. The term remuneration has been interpreted broadly to include anything of value. Further, courts have found that if "one purpose" of renumeration is to induce referrals, the federal Anti-Kickback statute is violated. Violations are subject to significant civil and criminal fines and penalties for each violation, plus up to three times the remuneration involved, imprisonment and exclusion from government healthcare programs. In addition, a claim submitted for payment to any federal healthcare program that includes items or services that were made as a result of a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act, or FCA. The Anti-Kickback Statute has been interpreted to apply to arrangements between biopharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers, among others, on the other. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution;
- the U.S. federal civil and criminal false claims laws, including the U.S. False Claims Act, or FCA, which can be enforced through "qui tam" or "whistleblower" actions, and civil monetary penalty laws, which impose criminal and civil penalties against individuals or entities for, among other things, knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid, or other federal health care programs that are false, fictitious or fraudulent; knowingly making, using, or causing to be made or used, a false record or statement material to a false, fictitious or fraudulent claim or an obligation to pay or transmit money or property to the federal government; or knowingly concealing or knowingly and improperly avoiding or decreasing or concealing such an obligation. to pay money to the federal government. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of these statutes or specific intent to violate them in order to have committed a violation. A claim that includes items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim under the FCA. Manufacturers can be held liable under the FCA even when they do not submit claims directly to government payors if they are deemed to "cause" the submission of false or fraudulent claims. When an entity is determined to have violated the FCA, the government may impose civil fines and penalties for each false claim, plus treble damages, and exclude the entity from participation in Medicare, Medicaid and other federal healthcare programs;
- the U.S. federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false fictitious or fraudulent statement or entry in connection with the delivery of, or payment for, healthcare

benefits, items or services relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity can be found guilty of violating HIPAA fraud provisions without actual knowledge of the statute or specific intent to violate it;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose requirements relating to the privacy, security and transmission of individually identifiable health information on certain covered healthcare providers, health plans and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the creation, use, receipt, maintenance or disclosure of individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, there may be additional federal, state and non-U.S. laws which govern the privacy and security of health and other personal information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts;
- the U.S. federal Physician Payments Sunshine Act, created under Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, the ACA, and its implementing regulations, which require manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program to report annually to the Centers for Medicare and Medicaid Services, or CMS, an agency within the U.S. Department of Health and Human Services, or HHS, under the Open Payments Program, information related to direct or indirect payments and other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians and their immediate family members. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made during the previous year to certain non-physician providers such as physician assistants and nurse practitioners;
- U.S. federal and state consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers; and
- analogous U.S. state, local and foreign laws and regulations, such as state and foreign anti-kickback, false claims, consumer protection and unfair competition laws which may apply to pharmaceutical business practices, including but not limited to, research, distribution, sales and marketing arrangements as well as submitting claims involving healthcare items or services reimbursed by any third-party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and other relevant compliance guidance promulgated by the federal government that otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to file reports with states regarding pricing and marketing information, such as the tracking and reporting of gifts, compensations and other remuneration and items of value provided to healthcare professionals and entities; state and local laws requiring the registration of pharmaceutical sales representatives; and state and foreign laws governing the privacy and security of health information, some of which may be more stringent than those in the United States (such as the European Union, which adopted the General Data Protection Regulation, which became effective in May 2018) in certain circumstances, and may differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and regulatory safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. Efforts to ensure that business arrangements comply with applicable healthcare laws involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us and we are not successful in defending ourselves or asserting its rights, those actions could have a significant impact on our business, including the imposition of significant civil, criminal and administrative penalties, damages, disgorgement, imprisonment, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, reporting obligations and oversight if we become subject to integrity and oversight agreements to resolve allegations of non-compliance, contractual damages, reputational harm, diminished profits and future earnings and curtailment of operations, any of which could adversely affect our ability to operate our business and the results of operations. In addition, commercialization of any drug product outside the United States will also likely be subject to foreign equivalents of the healthcare laws mentioned above, among other foreign laws. Further, if any of the physicians or other healthcare providers or entities with whom we expect to do business with are found to be not in compliance with applicable laws, they may be subject to similar penalties.

Other data privacy and security laws

In the United States, numerous federal and state laws and regulations, including state data breach notification laws, state health information privacy laws and federal and state consumer protection laws, govern the collection, use, disclosure and protection of health-related and other personal information outside of HIPAA and its implementing regulations. For example, in June 2018, the State of California enacted the California Consumer Privacy Act of 2018, or the CCPA, which came into effect on January 1, 2020 and provides new data privacy rights for consumers and new operational requirements for companies, which may increase our compliance costs and potential liability. The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. While there is currently an exception for protected health information that is subject to HIPAA and clinical trial regulations, as currently written, the CCPA may impact certain of our business activities. The CCPA could mark the beginning of a trend toward more stringent state privacy legislation in the United States, which could increase our potential liability and adversely affect our business.

In the event we decide to conduct clinical trials or continue to enroll subjects in our ongoing or future clinical trials, we may be subject to additional privacy restrictions imposed by other countries and jurisdictions. The collection, use, storage, disclosure, transfer, or other processing of personal data regarding individuals in the European Economic Area, or EEA, including personal health data, is subject to the EU General Data Protection Regulation, or GDPR, which became effective in May 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EEA, including the United States, and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies and obtain compensation for damages resulting from violations of the GDPR. In addition, the

GDPR includes restrictions on cross-border data transfers. The GDPR may increase our responsibility and liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries. Compliance with the GDPR will be a rigorous and time-intensive process that may increase our cost of doing business or require us to change our business practices and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation, and reputational harm in connection with our European activities. Further, the United Kingdom's decision to leave the EU, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear how data transfers to and from the United Kingdom will be regulated now that the United Kingdom has left the EU.

Current and future healthcare reform legislation

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. For example, in December 2016, the 21st Century Cures Act, or Cures Act, was signed into law. The Cures Act, among other things, is intended to modernize the regulation of drugs and devices and to spur innovation, but its ultimate implementation is uncertain. More recently, in August 2017, the FDA Reauthorization Act was signed into law to reauthorize the FDA's user fee programs and included additional drug and device provisions that build on the Cures Act.

In addition, in both the United States and certain foreign jurisdictions, there have been, and likely will continue to be, a number of legislative and regulatory changes regarding the health care system directed at broadening the availability of healthcare, improving the quality of healthcare and containing or lowering the cost of healthcare. For example, in March 2010 the ACA was enacted, which substantially changed the way health care is financed by both governmental and private insurers, and significantly impacted the U.S. pharmaceutical industry. The ACA, among other things, subjects biological products to potential competition by lower-cost biosimilars, expands the types of entities eligible for the 340B drug discount program; introduced a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected; increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations; established annual fees and taxes on manufacturers of certain branded prescription drugs; and created a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (increased to 70% pursuant to the Bipartisan Budget Act of 2018, or BBA, effective as of January 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D.

Since its enactment, there remain judicial, administrative, executive and legislative challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. Various portions of the ACA are currently undergoing legal and constitutional challenges in the United States Supreme Court; the Trump Administration has issued various Executive Orders which eliminated cost sharing subsidies and various provisions that would impose a fiscal burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices; and Congress has introduced several pieces of legislation aimed at significantly revising or repealing the ACA. Also, in December 2018, CMS issued a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program. Since then, the ACA risk adjustment program payment parameters have been updated annually. It is unclear whether the ACA will be overturned, repealed, replaced, or further amended.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. For example, in August 2011, the Budget Control Act of 2011, among other

things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs, including aggregate reductions of Medicare payments to providers of up to 2% per fiscal year. These reductions went into effect on April 1, 2013, and, due to subsequent legislative amendments, will remain in effect through 2030 unless additional Congressional action is taken. However, pursuant to the Coronavirus Aid, Relief and Economic Security Act, or CARES Act, these Medicare sequester reductions under the Budget Control Act of 2011 will be suspended from May 1, 2020 through December 31, 2020 due to the COVID-19 pandemic. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Additionally, the BBA, among other things, also amended the ACA, effective January 1, 2019, by increasing the point-of-sale discount (from 50% under the ACA to 70%) that is owed by pharmaceutical manufacturers who participate in Medicare Part D and closing the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole".

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, CMS may develop new payment and delivery models, such as bundled payment models. There also has been heightened governmental scrutiny in the United States of pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs and reform government program reimbursement methodologies for drugs. For example, at the federal level, on March 10, 2020, the Trump administration sent "principles" for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses and place limits on pharmaceutical price increases. Moreover, the U.S. Presidential administration previously released a "Blueprint" to lower drug prices and reduce out-of-pocket costs of drugs that contained proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. HHS has solicited feedback on some of these measures and has implemented others under its existing authority. For example, in May 2019, CMS issued a final rule that would allow Medicare Advantage Plans the option of using step therapy, a type of prior authorization, for Part B drugs beginning January 1, 2020. This final rule codified CMS's policy change that was effective January 1, 2019. Although a number of these and other measures may require additional authorization to become effective, Congress and the U.S. Presidential administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. Any reduction in reimbursement from Medicare and other government programs may result in a similar reduction in payments from private payers.

At the state level, legislatures in the United States have also increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs.

In the European Union and in other foreign jurisdictions, similar political, economic and regulatory developments may affect our ability to profitably commercialize our products. In addition to continuing

pressure on prices and cost containment measures, legislative developments at the European Union or EU member state level may result in significant additional requirements or obstacles that may increase our operating costs.

Legislative and regulatory proposals, and enactment of laws, at the foreign, federal and state levels, directed at containing or lowering the cost of healthcare, will likely continue into the future.

Rest of world regulation

For other countries outside of the European Union and the United States, such as countries in Eastern Europe, Latin America or Asia, the requirements governing product development, the conduct of clinical trials, manufacturing, distribution, marketing approval, advertising and promotion, product licensing, pricing and reimbursement vary from country to country. Additionally, clinical trials must be conducted in accordance with GCP requirements and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

If we fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Additionally, to the extent that any of our product candidates, once approved, are sold in a foreign country, we may be subject to applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws and implementation of corporate compliance programs and reporting of payments or other transfers of value to healthcare professionals.

Additional laws and regulations governing international operations

If we further expand our operations outside of the United States, we must dedicate additional resources to comply with numerous laws and regulations in each jurisdiction in which we plan to operate. The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering, authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Compliance with the FCPA is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered by U.S. authorities that enforce the FCPA, including the Department of Justice, to be foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. If we expand our presence outside of the United States, it will require us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain products and product candidates outside of the United States, which could limit our growth potential and increase our development costs.

The failure to comply with laws governing international business practices may result in substantial civil and criminal penalties and suspension or debarment from government contracting. The SEC also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions.

Coverage, pricing and reimbursement

Significant uncertainty exists as to the coverage, pricing and reimbursement status of any products seeking regulatory approval. Successful commercialization of new drug products depends in part on the extent to which coverage and reimbursement for those drug products will be available from government health administration authorities, private health insurers and other organizations. The availability and extent of reimbursement depend substantially, both domestically and abroad, on the extent to which the costs of drugs products are paid for by third-party payors, such as government health care programs (e.g., Medicare, Medicaid), health maintenance organizations, managed care providers, pharmacy benefit and similar healthcare management organizations, private health coverage insurers and other third-party payors. These third-party payors decide which medications they will pay for and will establish reimbursement levels.

In the United States, the principal decisions about reimbursement for new drug products are typically made by CMS. CMS decides whether and to what extent a new drug product will be covered and reimbursed under Medicare, and private payors tend to follow CMS to a substantial degree. Factors payors consider in determining reimbursement are based on whether the product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

In the United States, no uniform policy of coverage and reimbursement for drug products exists among third-party payors and coverage and reimbursement levels for drug products can differ significantly from payor to payor. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the reimbursement rate that the payor will pay for the product. One payor's determination to provide coverage for a product does not assure that other payors will also provide coverage and reimbursement for the product. Third-party payors may also limit coverage to specific products on an approved list, or formulary, which might not include all of the FDA-approved products for a particular indication.

Various federal laws may impact the extent of coverage and reimbursement status provided by government health care programs. For instance, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the MMA, established the Medicare Part D program to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities that provide coverage of outpatient prescription drugs. While all Medicare drug plans must give at least a standard level of coverage set by Medicare, Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each Part D prescription drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for drugs for which we obtain marketing approval. Any negotiated prices for any of our products covered by a Part D prescription drug plan will likely be

lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental payors.

For a drug product to receive federal reimbursement under the Medicaid or Medicare Part B programs or to be sold directly to U.S. government agencies, the manufacturer must extend discounts to entities eligible to participate in the 340B drug pricing program. The required 340B discount on a given product is calculated based on the average manufacturer price, or AMP, and Medicaid rebate amounts reported by the manufacturer. As of 2010, the ACA expanded the types of entities eligible to receive discounted 340B pricing, although under the current state of the law these newly eligible entities (with the exception of children's hospitals) will not be eligible to receive discounted 340B pricing on orphan drugs. As 340B drug pricing is determined based on average manufacturer price, or AMP, and Medicaid rebate data, the revisions to the Medicaid rebate formula and AMP definition described above could cause the required 340B discount to increase. The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. The plan for the research was published in 2012 by the Department of Health and Human Services, the Agency for Healthcare Research and Quality and the National Institutes for Health and periodic reports on the status of the research and related expenditures are made to Congress. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the research will have on the sales of our product candidates, if any such drug or the condition that they are intended to treat are the subject of a trial.

It is also possible that comparative effectiveness research, whether conducted by government or private entities, demonstrating benefits in a competitor's drug could adversely affect the sales of our product candidate. If third-party payors do not consider our drugs to be cost-effective compared to other available therapies, they may not cover our drugs after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our drugs on a profitable basis.

In addition to the above-mentioned laws, increasing efforts by third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our product candidates. In order to secure coverage and reimbursement for any product that might be approved for sale, we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain FDA or comparable regulatory approvals. Additionally, we may also need to provide discounts to purchasers, private health plans or government healthcare programs. Our product candidates, if approved, may nonetheless not be considered medically necessary or cost-effective. If third-party payors do not consider a product to be cost-effective compared to other available therapies, they may not cover the product after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow a company to sell its products at a profit. We expect to experience pricing pressures from third-party payors in connection with the potential sale of any of our product candidates

Outside of the United States, the pricing of pharmaceutical products and medical devices is subject to governmental control in many countries. For example, in the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost effectiveness of a particular therapy to currently available therapies or so-called health technology assessments, in order to obtain reimbursement or pricing approval. Other countries may allow companies to fix their own prices for products, but monitor

and control product volumes and issue guidance to physicians to limit prescriptions. Efforts to control prices and utilization of pharmaceutical products and medical devices will likely continue as countries attempt to manage healthcare expenditures. Historically, products launched in the European Union do not follow price structures of the United States and generally prices tend to be significantly lower.

Employees

As of June 30, 2020, we had 40 full-time employees, including three temporary employees. Of our 40 employees, 19 have Ph.D. or M.D. degrees and 28 are engaged in research and development activities. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Facilities

We sublease a facility containing 6,374 square feet of office space, which is located at One Broadway, Cambridge, Massachusetts 02142. Our sublease expires on December 31, 2021. We believe that our current facilities are sufficient to meet our current and near-term needs and that, should it be needed, suitable additional space will be available.

Legal Proceedings

As of the date of this prospectus, we are not party to any material legal matters or claims. We may become party to legal matters and claims arising in the ordinary course of business. We cannot predict the outcome of any such legal matters or claims, and despite the potential outcomes, the existence thereof may have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

MANAGEMENT

Executive Officers and Directors

The following table sets forth the name, age, and position of each of our current executive officers and directors as of June 30, 2020:

Name	Age	Position
Executive Officers:		
Marcio Souza	41	President, Chief Executive Officer, Director
Bernard Ravina, M.D.	53	Chief Medical Officer
Stuart Chaffee, Ph.D.	46	Chief Financial Officer
Alex Nemiroff, J.D.	41	General Counsel, Secretary
Non-Employee Directors:		
Nicholas Galakatos, Ph.D.	62	Chairman, Director
Gregory Norden	62	Director
Ari Brettman, M.D.(4)	38	Director
Thomas Dyrberg, M.D.(4)	65	Director
Paul Medeiros(4)	58	Director
Kiran Reddy, M.D.	43	Director
Stefan Vitorovic	35	Director
William Young	75	Director

(1) Member of the audit committee.

(2) Member of the compensation committee.

(3) Member of the nominating and corporate governance committee.

(4) Each of Dr. Brettman, Dr. Dyrberg and Mr. Medeiros is expected to resign from our board of directors effective immediately prior to, and contingent upon, the effectiveness of the registration statement of which this prospectus forms a part.

Executive Officers

Marcio Souza Mr. Souza has served as a director and our President and Chief Executive Officer since April 2020. Prior to joining us, Mr. Souza was at PTC Therapeutics, Inc., or PTC, where he served as its Chief Operating Officer from May 2017 to April 2020 and its Senior Vice President and Head of Product Strategy from July 2016 to May 2017. Prior to joining PTC, Mr. Souza served in positions of increasing responsibility at NPS Pharmaceuticals, Inc., Shire Human Genetic Therapies Inc. and Sanofi Genzyme Corporation. From May 2019 to May 2020, Mr. Souza also served on the board of directors of Clearpoint Neuro, Inc. (NASDAQ: CLPT) (previously MRI Interventions, Inc.). Mr. Souza received a degree in pharmacy and biochemistry with a specialization in toxicology and clinical analysis from the University of São Paulo and an M.B.A. from Fundação Dom Cabral. We believe Mr. Souza is qualified to serve on our board of directors because of his business and leadership experience in the life sciences industry and his scientific background.

Bernard Ravina, M.D. Dr. Ravina has served as our Chief Medical Officer since August 2018. Prior to joining us, Dr. Ravina was at Voyager Therapeutics, Inc. (NASDAQ: VYGR), where he served as Chief Medical Officer from February 2017 to August 2018 and as Vice President of Clinical Development from March 2014 to January 2017. Dr. Ravina was also Medical Director in Clinical Development at Biogen Inc. (NASDAQ: BIIB), or Biogen, from 2010 to 2014, where he worked on both

small molecule drugs and biologics for the treatment of neurological disorders. From 2005 to 2010, Dr. Ravina was an Associate Professor of Neurology, Director of the Movement and Inherited Neurological Disorders Unit, Associate Director of Clinical Trials Coordination Center and Vice Chair of Neurology at the University of Rochester School of Medicine. Dr. Ravina received a B.A. in psychology from Columbia University, an M.D. from Johns Hopkins University School of Medicine and an M.S.C.E. in clinical epidemiology from the University of Pennsylvania where he completed his residency and fellowship training in Neurology.

Stuart Chaffee, Ph.D. Dr. Chaffee has served as our Chief Financial Officer since June 2020. Prior to his role as Chief Financial Officer, Dr. Chaffee served as our Chief Business Officer from November 2017 to June 2020. Dr. Chaffee has an extensive background in drug discovery and development, including as an Entrepreneur in Residence at Atlas Venture from November 2015 to November 2017 where he was a co-founder and the Head of Business Operations at Kymera Therapeutics, Inc. from June 2016 to November 2017. From 2014 to 2015, Dr. Chaffee served as Senior Director of Corporate Development at Biogen. Dr Chaffee received a B.S. in chemistry from The College of William and Mary, a Ph.D. in chemistry from Yale University and an M.B.A. in finance from the Wharton School of the University of Pennsylvania.

Alex Nemiroff, J.D. Mr. Nemiroff has served as our General Counsel since June 2020. Prior to his role as General Counsel, Mr. Nemiroff served as our VP of Legal from January 2020 to June 2020. Mr. Nemiroff was also a co-founder of RogCon, Inc. and RogCon U.R., Inc., and he has served as both entities' Chief Executive Officer since inception in November 2015. Mr. Nemiroff has experience working in commercial and securities litigation while at Greenberg Traurig LLP, and served as law clerk to the Honorable Paul C. Huck of the United States District Court for the Southern District of Florida. Mr. Nemiroff received a B.B.A from the University of Michigan's Ross School of Business, and a J.D. from Northwestern University School of Law.

Non-Employee Directors

Nicholas Galakatos, Ph.D., Dr. Galakatos has served as the chairman of our board of directors since September 2015. Dr. Galakatos is the Global Head of Life Sciences of The Blackstone Group Inc., or Blackstone. Prior to joining Blackstone, Dr. Galakatos was a co-Founder and Managing Director of Clarus Ventures, LLC (acquired by Blackstone in 2018), or Clarus, since the firm's inception in 2005. Dr. Galakatos is currently the chairman of the board of directors of Anthos Therapeutics, Inc., or Anthos, a private, clinical-stage cardiovascular biotech founded in 2019, and a member of the board of directors of Talaris, Inc. He is a member of the Director's Council of the Koch Institute at MIT and a member of the Board of Trustees at Reed College. Dr. Galakatos received a B.A. in chemistry from Reed College and a Ph.D. in organic chemistry from the Massachusetts Institute of Technology. We believe Dr. Galakatos is qualified to serve on our board of directors because of his business and leadership experience in the life sciences industry and his scientific background.

Gregory Norden is the former Chief Executive Officer of Wyeth and has served as a member of our board of directors since March 2019. Mr. Norden currently serves as the Managing Director of G9 Capital Group LLC, which invests in early stage ventures and provides corporate finance advisory services, since 2010. Mr. Norden currently serves on the boards of directors of Zoetis Inc. (NYSE: ZTS), the leading animal health company, NanoString Technologies, Inc. (NASDAQ: NSTG), a leading provider of life science tools for translational research, Royalty Pharma plc (NASDAQ: RPRX), a leading funder of innovation across the biopharmaceutical industry, and Univision Communications Inc., the leading multimedia company serving Hispanic America. Mr. Norden is a former director of Human Genome Sciences at Welch Allyn, Inc. and Entasis Therapeutics Holdings Inc. (NASDAQ: ETTX) Mr. Norden received a B.S. in management and economics from the State University of New York at Plattsburgh and an M.S. in accounting from Long Island University—C.W. Post. We believe Mr. Norden is qualified to serve on our board of directors because of his background in finance and

experience as a senior executive in the global healthcare and pharmaceutical industries, as well as his public company board experience.

Ari Brettman, M.D., one of our co-founders, has served as a member of our board of directors since March 2018. Dr. Brettman is also currently a Managing Director at Blackstone, a position he has held since January 2020. Previously, Dr. Brettman served as a Principal at Blackstone from January 2017 to December 2019, and as an Associate from September 2014 to December 2016. Additionally, Dr. Brettman is a co-founder of Anthos Therapeutics, Inc., or Anthos, and served as Anthos's Chief Medical Officer until July 2019. Dr. Brettman received an A.B. in history and science from Harvard College and an M.D. from Duke University. Dr. Brettman expects to resign from our board of directors effective immediately prior to, and contingent upon, the effectiveness of the registration statement of which this prospectus forms a part.

Thomas Dyrberg, M.D. has served as a member of our board of directors since March 2018. In December 2000, Dr. Dyrberg joined Novo Holdings A/S, then known as Novo A/S, where he was employed as Senior Partner and has since August 2015, as a Managing Partner of the Novo Ventures group. From August 2007 to May 2019, Dr. Dyrberg was a member of the board of directors of Ophthotech Corp. (now IVERIC bio, Inc. (NASDAQ: ISEE)). Dr. Dyrberg previously served on the board of directors of Veloxis A/S, a publicly traded specialty pharmaceutical company. Dr. Dyrberg has held research positions at the Hagedorn Research Institute in Denmark and at the Scripps Research Institute in California. Dr. Dyrberg received a D.M.Sc. and an M.D. from the University of Copenhagen. Dr. Dyrberg expects to resign from our board of directors effective immediately prior to, and contingent upon, the effectiveness of the registration statement of which this prospectus forms a part.

Paul Medeiros has served as a member of our board of directors since March 2018. In addition to his role as our director, since January 2018, Mr. Medeiros has served as President of Imbrium Therapeutics L.P., a privately held, clinical stage biopharmaceutical company focused on therapeutics in the areas of CNS, non-opioid pain and oncology. Additionally, since September 2017, Mr. Medeiros has served as a Senior Vice President of Purdue Pharma L.P. Mr. Medeiros also acted as Senior Vice President of Mundipharma International Limited, a privately held pharmaceutical consortium. Mr. Medeiros also served as a member of the board of directors of Edo Pharmaceuticals Limited from June 2013 to September 2017. Mr. Medeiros received an A.B in American civilization from Brown University and an M.B.A. from Columbia University Graduate School of Business. Mr. Medeiros expects to resign from our board of directors effective immediately prior to, and contingent upon, the effectiveness of the registration statement of which this prospectus forms a part.

Kiran Reddy, M.D., has served as a member of our board of directors since September 2015. Prior to his role as our director, Dr. Reddy served as our President and Chief Executive Officer from November 2015 to April 2020. Dr. Reddy is also currently a Managing Director at Blackstone, a position he has served in since May 2020. Dr. Reddy was a venture partner at Clarus from November 2015 to November 2019 prior to its acquisition by Blackstone. From 2014 to 2015, Dr. Reddy served as part of Biogen's Corporate Strategy leadership team, where he focused on sourcing new technologies and product opportunities to support the Company's growth. Dr. Reddy was previously a Howard Hughes science fellow and has authored several peer-reviewed scientific papers in the field of epilepsy, neuroimmunology and neurodegenerative diseases. Dr. Reddy received a B.S. in economics, an M.D. and an M.B.A. from Georgetown University. We believe Dr. Reddy is qualified to serve on our board of directors because of his corporate leadership experience, business background, and perspective and experience as one of Praxis' former executive officers.

Stefan Vitorovic has served as a member of our board of directors since March 2018 . Mr. Vitorovic is the co-founder and Managing Director of Vida Ventures, LLC, or Vida Ventures, a role he has served in since January 2017. Prior to Vida Ventures, Mr. Vitorovic was a Principal at Third

Rock Ventures, where he was employed from July 2014 to January 2017. Prior to Third Rock Ventures, Mr. Vitorovic was a healthcare private equity investor at TPG Capital from August 2012 to June 2014. Mr. Vitorovic received a B.S. with honors in molecular & cellular biology and an M.S. in molecular & cellular biology from Stanford University as well as an M.B.A from Harvard University. We believe Mr. Vitorovic is qualified to serve on our board of directors because of his scientific background and business experience.

William Young has served as a member of our board of directors since December 2016. Mr. Young is a Senior Advisor with Blackstone. Prior to its acquisition by Blackstone, Mr. Young joined Clarus in March 2010 and held various roles, including Venture Partner, Senior Advisor and portfolio company board member. Mr. Young currently serves as the chairman of the board of directors of Annexon, Inc. (NASDAQ: ANNX) and NanoString, and as a member of the board of directors of Theravance BioPharma Inc. (NASDAQ: TBPH). Mr. Young also served on the boards of directors of Vertex Pharmaceuticals Inc. (NASDAQ: VRTX) from May 2015 to June 2020 and BioMarin Pharmaceutical Inc. (NASDAQ: BMRN) from September 2010 to November 2015. Mr. Young was elected to the National Academy of Engineering in 1993 for his contributions to biotechnology. Mr. Young received a B.S. in chemical engineering from Purdue University and an M.B.A. from Indiana University in marketing and finance and holds an honorary doctorate in engineering from Purdue University. We believe Mr. Young is qualified to serve on our board of directors because of his scientific background, business experience and his service on the board of directors of other life sciences companies

Family Relationships

There are no family relationships among any of our executive officers or directors.

Composition of Our Board of Directors

Our board of directors currently consists of nine members, each of whom are members pursuant to the board composition provisions of our amended and restated certificate of incorporation and agreements with our stockholders, which agreements are described under “Certain Relationships and Related Party Transactions.” These board composition provisions will terminate upon the closing of this offering. Upon the termination of these provisions, there will be no further contractual obligations regarding the election of our directors. Our nominating and corporate governance committee and our board of directors may therefore consider a broad range of factors relating to the qualifications and background of nominees, which may include diversity, which is not only limited to race, gender or national origin. Our nominating and corporate governance committee’s and our board of directors’ priority in selecting board members is identification of persons who will further the interests of our stockholders through his or her established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business, understanding of the competitive landscape and professional and personal experiences and expertise relevant to our growth strategy. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal. Our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering also provide that our directors may be removed only for cause by the affirmative vote of the holders of at least 66.67% of the votes that all our stockholders would be entitled to cast in an annual election of directors, and that any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office.

Director Independence

The Nasdaq Stock Market LLC, or Nasdaq, Marketplace Rules, or the Nasdaq Listing Rules, require a majority of a listed company’s board of directors to be comprised of independent directors within one year of listing. In addition, the Nasdaq Listing Rules require that, subject to specified

exceptions and phase in periods following the initial public offering, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Exchange Act and compensation committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under the Nasdaq Listing Rules, a director will only qualify as an "independent director" if, in the opinion of the listed company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee: (1) accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries; or (2) otherwise be an affiliated person of the listed company or any of its subsidiaries. In order to be considered independent for purposes of Rule 10C-1, the board must consider, for each member of a compensation committee of a listed company, all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: (1) the source of compensation of the director, including any consulting, advisory or other compensatory fee paid by such company to the director; and (2) whether the director is affiliated with the company or any of its subsidiaries or affiliates.

In , our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that each of our directors, with the exception of , is an "independent director" as defined under the Nasdaq Listing Rules. In making such determination, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances that our board of directors deemed relevant in determining his or her independence, including the beneficial ownership of our capital stock by each non-employee director.

Staggered Board

In accordance with the terms of our amended and restated certificate of incorporation and amended and restated bylaws that will become effective upon the closing of this offering, will provide that the number of our directors shall be fixed from time to time by a resolution of the majority of our board of directors and that our board of directors will be divided into three staggered classes of directors and each director will be assigned to one of the three classes. At each annual meeting of the stockholders, a class of directors will be elected for a three-year term to succeed the directors of the same class whose terms are then expiring. The terms of the directors will expire upon the election and qualification of successor directors at the annual meeting of stockholders to be held during the years 2021 for Class I directors, 2022 for Class II directors and 2023 for Class III directors.

- Our Class I directors will be and ;
- Our Class II directors will be and ; and
- Our Class III directors will be and .

The division of our board of directors into three classes with staggered three-year terms may delay or prevent stockholder efforts to effect a change of our management or a change in control. See the "Description of Capital Stock—Anti-Takeover Effects of Delaware Law, Our Amended and Restated

Certificate of Incorporation and Our Amended and Restated By-Laws" section of this prospectus for a discussion of these and other anti-takeover provisions found in our third amended and restated certificate of incorporation and amended and restated bylaws, which will become effective immediately prior to the completion of this offering. We expect that additional directorships resulting from an increase in the number of directors, if any, will be distributed among the three classes so that, as nearly as possible, each class shall consist of one third of the board of directors.

Board Leadership Structure and the Role of the Board in Risk Oversight

Board Leadership Structure

The positions of our chairperson of the board and chief executive officer are separated, with Mr. Souza serving as our Chief Executive Officer and Dr. Galakatos serving as the chairperson of our board of directors. Separating these positions allows Mr. Souza, as our Chief Executive Officer, to focus on our day-to-day business, while allowing the chairperson of the board to lead the board of directors in its fundamental role of providing advice to and independent oversight of management. Our board of directors recognizes the time, effort and energy that Mr. Souza, as our Chief Executive Officer, must devote to his position in the current business environment, as well as the commitment required to serve as our chairperson, particularly as the board of directors' oversight responsibilities continue to grow. Our board of directors also believes that this structure ensures a greater role for the independent directors in the oversight of our company and active participation of the independent directors in setting agendas and establishing priorities and procedures for the work of our board of directors. Our board of directors believes its administration of its risk oversight function has not affected its leadership structure. Our board of directors believes that having separate positions is the appropriate leadership structure for us at this time and demonstrates our commitment to good corporate governance.

Role of the Board in Risk Oversight

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. We face a number of risks, including those described under the section titled "Risk Factors" in this prospectus. Our board of directors is actively involved in oversight of risks that could affect us. This oversight is conducted primarily by our full board of directors, which has responsibility for general oversight of risks.

Following the closing of this offering, our board of directors will satisfy this responsibility through full reports by each committee chair regarding the committee's considerations and actions, as well as through regular reports directly from officers responsible for oversight of particular risks within our company. Our board of directors believes that full and open communication between management and the board of directors is essential for effective risk management and oversight.

Committees of Our Board of Directors

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee, each of which will operate pursuant to a charter to be adopted by our board of directors and will be effective upon the effectiveness of the registration statement of which this prospectus is a part. Our board of directors may establish other committees to facilitate the management of our business. Upon the effectiveness of the registration statement of which this prospectus is a part, the composition and functioning of all of our committees will comply with all applicable requirements of the Sarbanes-Oxley Act of 2002, Nasdaq and U.S. Securities and Exchange Commission rules and regulations. Members will serve on these committees until their resignation or until otherwise determined by our board of directors. In addition, from time to time, special committees may be established under the direction of our board of directors when necessary to address specific issues.

Audit Committee

Effective upon the completion of this offering, will serve on the audit committee, which will be chaired by . Our board of directors has determined that , and are "independent" for audit committee purposes as that term is defined in the rules of the SEC and the applicable Nasdaq rules, and each has sufficient knowledge in financial and auditing matters to serve on the audit committee. Our board of directors has designated as an "audit committee financial expert," as defined under the applicable rules of the SEC. The audit committee's responsibilities upon closing of this offering include:

- appointing, approving the compensation of and assessing the independence of our independent registered public accounting firm;
- pre-approving auditing and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;
- reviewing the overall audit plan with our independent registered public accounting firm and members of management responsible for preparing our financial statements;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures as well as critical accounting policies and practices used by us;
- coordinating the oversight and reviewing the adequacy of our internal control over financial reporting;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;
- recommending based upon the audit committee's review and discussions with management and our independent registered public accounting firm whether our audited financial statements shall be included in our Annual Report on Form 10-K;
- monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters;
- preparing the audit committee report required by SEC rules to be included in our annual proxy statement;
- reviewing all related person transactions for potential conflict of interest situations and approving all such transactions; and
- reviewing quarterly earnings releases.

Compensation Committee

Effective upon the completion of this offering, will serve on the compensation committee, which will be chaired by . Our board of directors has determined that , and are independent" as defined in the applicable Nasdaq rules. The compensation committee's responsibilities upon closing of this offering include:

- annually reviewing and approving corporate goals and objectives relevant to the compensation of our chief executive officer;
- evaluating the performance of our chief executive officer in light of such corporate goals and objectives and determining the compensation of our chief executive officer;
- reviewing and approving the compensation of our other executive officers;
- reviewing and establishing our overall management compensation, philosophy and policy;
- overseeing and administering our compensation and similar plans;

- evaluating and assessing potential and current compensation advisors in accordance with the independence standards identified in the applicable Nasdaq rules;
- retaining and approving the compensation of any compensation advisors;
- reviewing and approving our policies and procedures for the grant of equity-based awards;
- evaluating director compensation and making recommendations on director compensation to the Board;
- preparing the compensation committee report required by SEC rules, if and when required, to be included in our annual proxy statement; and
- reviewing and approving the retention or termination of any consulting firm or outside advisor to assist in the evaluation of compensation matters.

Nominating and Corporate Governance Committee

Effective upon the completion of this offering, will serve on the nominating and corporate governance committee, which will be chaired by . Our board of directors has determined that , and are "independent" as defined in the applicable Nasdaq rules. The nominating and corporate governance committee's responsibilities upon closing of this offering include:

- developing and recommending to the board of directors criteria for board and committee membership;
- establishing procedures for identifying and evaluating board of director candidates, including nominees recommended by stockholders;
- reviewing the size and composition of the board of directors to ensure that it is composed of members containing the appropriate skills and expertise to advise us;
- identifying individuals qualified to become members of the board of directors;
- recommending to the board of directors the persons to be nominated for election as directors and to each of the board's committees;
- developing and recommending to the board of directors a code of business conduct and ethics and a set of corporate governance guidelines; and
- overseeing the evaluation of our board of directors and management.

Our board of directors may from time to time establish other committees.

Compensation Committee Interlocks and Insider Participation

None of the members of our compensation committee has at any time during the prior three years been one of our officers or employees. None of our executive officers currently serves, or in the past fiscal year has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our board of directors or compensation committee. For a description of transactions between us and members of our compensation committee and affiliates of such members, please see "Certain Relationships and Related Party Transactions."

Code of Business Conduct and Ethics

We plan to adopt a written code of business conduct and ethics that applies to all of our employees, officers and directors, including those officers responsible for financial reporting, which will become effective upon closing of this offering. Upon the closing of this offering, our code of business conduct and ethics will be available on the Corporate Governance section of our website at https://praxismedicines.com/. We intend to disclose any amendments to the code, or any waivers of its requirements, on our website or in a Current Report on Form 8-K as may be required by SEC or

Nasdaq rules. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus.

EXECUTIVE COMPENSATION

Executive Compensation Overview

The following discussion contains forward looking statements that are based on our current plans, considerations, expectations and determinations regarding future compensation programs. The actual amount and form of compensation and the compensation policies and practices that we adopt in the future may differ materially from currently planned programs as summarized in this discussion.

As an emerging growth company, we have opted to comply with the executive compensation disclosure rules applicable to "smaller reporting companies," as such term is defined in the rules promulgated under the Securities Act of 1933, as amended, or the Securities Act. The compensation provided to our named executive officers for the fiscal year ended December, 31, 2019 is detailed in the 2019 Summary Compensation Table and accompanying footnotes and narrative that follow. Our named executive officers for the fiscal year ended December 31, 2019 were:

- Kiran Reddy, M.D., our former President and Chief Executive Officer;
- Stuart Chaffee, Ph.D., our current Chief Financial Officer and former Chief Business Officer; and
- Bernard Ravina, M.D., our Chief Medical Officer.

In April 2020, Dr. Reddy resigned as our President and Chief Executive Officer and Marcio Souza became our President and Chief Executive Officer.

To date, the compensation of our named executive officers has consisted of a combination of base salary, bonuses and long-term incentive compensation in the form of stock options. Our named executive officers, like all full-time employees, are eligible to participate in our health and welfare benefit plans. As we transition from a private company to a publicly traded company, we intend to evaluate our compensation values and philosophy and compensation plans and arrangements as circumstances require.

2019 Summary Compensation Table

The following table sets forth information regarding compensation awarded to, earned by or paid to our named executive officers for services rendered to us in all capacities during the fiscal year ended December 31, 2019.

Name and Principal Position	Year	Salary ($)	Bonus ($)(1)	Stock Awards ($)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)(2)	All Other Compensation ($)(3)	Total ($)
Kiran Reddy, M.D. *Former President and Chief Executive Officer(4)*	2019	385,500	–	–	–	190,823	269	576,592
Stuart Chaffee, Ph.D. *Chief Financial Officer and former Chief Business Officer(5)*	2019	308,250	–	–	–	83,228	297	391,775
Bernard Ravina, M.D. *Chief Medical Officer*	2019	350,000	75,000	–	–	126,000	271	551,271

(1) Amount represents a $75,000 bonus paid to Dr. Ravina pursuant to the terms of his offer letter with us.

(2) Amounts represent annual cash bonuses paid based on achievement of pre-determined corporate performance metrics in 2019, which were paid in March 2020. The corporate performance metrics were achieved at 90% of target.
(3) Amounts represent tax gross-ups on taxable long-term disability and commuter benefits in the following amounts: Dr. Reddy—$65 for long-term disability benefits and $204 for commuter benefits; Dr. Chaffee—$92 for long-term disability benefits and $205 for commuter benefits; and Dr. Ravina—$66 for long-term disability benefits and $205 for commuter benefits.
(4) Dr. Reddy resigned as our President and Chief Executive Officer effective April 20, 2020.
(5) Effective as of May 28, 2020, Dr. Chaffee was appointed Chief Financial Officer.

Narrative to the 2019 Summary Compensation Table

Base Salaries

Each named executive officer's base salary is a fixed component of annual compensation for performing specific duties and functions, and has been established by our board of directors taking into account each individual's role, responsibilities, skills and expertise. Base salaries are reviewed annually, typically in connection with our annual performance review process, approved by our board of directors and adjusted from time to time to realign salaries with market levels after taking into account individual responsibilities, performance and experience. During 2019, the annual base salaries for Dr. Reddy, Dr. Chaffee, and Dr. Ravina, were $385,500, $308,250 and $350,000, respectively.

Annual Bonus

For the fiscal year ended December 31, 2019, each of our named executive officers was eligible to earn an annual bonus based on the achievement of certain pre-determined corporate performance objectives. During 2019, the target annual bonuses for Dr. Reddy, Dr. Chaffee, and Dr. Ravina, were 55%, 30% and 40% of their base salary, respectively. The annual bonus earned by each named executive officer with respect to the fiscal year ended December 31, 2019 is reported under the "Non-Equity Incentive Plan Compensation" column in the "2019 Summary Compensation Table" above and was determined based upon achievement of the corporate performance objectives at 90% of target.

Equity Compensation

Although we do not have a formal policy with respect to the grant of equity incentive awards to our executive officers, we believe that equity grants provide our executives with a strong link to our long-term performance, create an ownership culture and help to align the interests of our executives and our stockholders. In addition, we believe that equity grants promote executive retention because they incentivize our executive officers to remain in our employment during the vesting period. Accordingly, our board of directors periodically reviews the equity incentive compensation of our named executive officers and may grant equity incentive awards to them from time to time. Our named executive officers have been granted certain options to purchase shares of our common stock, as described in more detail in the "Outstanding Equity Awards at 2019 Fiscal Year-end" table below.

Employment Arrangements with our Named Executive Officers

We initially entered into an offer letter with each of the named executive officers in connection with his employment with us, which set forth the terms and conditions of his employment, including base salary, target annual bonus opportunity and initial equity awards. In April 2020, we entered into employment agreements with Dr. Chaffee and Dr. Ravina that replace the offer letters and provide for specified payments and benefits in connection with a termination of employment in certain circumstances. Our goal in providing these specified payments is to offer sufficient cash continuity protection such that the named executive officers will focus their full time and attention on the requirements of the business rather than the potential implications for their respective positions. We

prefer to have certainty regarding the potential severance amounts payable to the named executive officers, rather than negotiating severance at the time that a named executive officer's employment terminates. We have also determined that accelerated vesting provisions with respect to outstanding equity awards in connection with a qualifying termination of employment in certain circumstances are appropriate because they encourage our named executive officers to stay focused on the business in those circumstances, rather than focusing on the potential implications for them personally. The employment agreements with Dr. Chaffee and Dr. Ravina require them to execute a separation agreement containing a general release of claims in favor of us to receive any severance payments and benefits under the employment agreements. The material terms of the offer letter with Dr. Reddy and the employment agreements with Dr. Chaffee and Dr. Ravina are summarized below.

Kiran Reddy, M.D. Dr. Reddy resigned as our President and Chief Executive Officer effective April 20, 2020. In connection with the commencement of his employment with us, Clarus Ventures entered into an offer letter with Dr. Reddy to serve as Chief Executive Officer of our company, which set forth his initial annual base salary, target bonus and initial equity award. In addition, the offer letter provided that, if he transitioned from the position of Chief Executive Officer of our company for good reason, he would have the opportunity to join Clarus Ventures as a venture partner at his current compensation for a period of one year.

Stuart Chaffee, Ph.D. Under the employment agreement with Dr. Chaffee, or the Chaffee Employment Agreement, Dr. Chaffee will continue to serve as our Chief Financial Officer on an at-will basis. Dr. Chaffee's current annual base salary is $330,000, which is subject to annual review, and he is eligible to earn an annual bonus with a target amount equal to 30% of his base salary. Dr. Chaffee is also eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans. Pursuant to the Chaffee Employment Agreement, in the event that his employment is terminated by us without "cause" or Dr. Chaffee resigns for "good reason" (as each term is defined in the Chaffee Employment Agreement), provided such termination constitutes a separation from service under Section 409A of the Code and subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to receive (i) a pro-rated portion of his 2020 target bonus, if such resignation occurs prior to payment of the 2020 annual bonus, (ii) base salary continuation for nine months following termination and (iii) subject to Dr. Chaffee's timely election to continue COBRA health coverage, payment of the monthly premium that we would have paid to provide health insurance to Dr. Chaffee had he remained employed with us until the earliest of (A) nine months following termination, (B) Dr. Chaffee's eligibility for group health insurance coverage through a new employer or (C) the date Dr. Chaffee ceases to be eligible for COBRA continuation coverage. In addition, in the event that Dr. Chaffee's employment is terminated by us without cause or Dr. Chaffee resigns for good reason, in either case within three months before or 12 months following a "change of control" (as defined in the Chaffee Employment Agreement), subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to accelerated vesting of 100% of all stock options and other stock-based awards that he holds.

Bernard Ravina, M.D. Under the employment agreement with Dr. Ravina, or the Ravina Employment Agreement, Dr. Ravina will continue to serve as our Chief Medical Officer on an at-will basis. Dr. Ravina's current annual base salary is $425,000, which is subject to annual review, and he is eligible to earn an annual bonus with a target amount equal to 40% of his base salary. Dr. Ravina is also eligible to participate in the employee benefit plans available to our employees, subject to the terms of those plans.

Pursuant to the Ravina Employment Agreement, in the event that his employment is terminated by us without "cause" or Dr. Ravina resigns for "good reason" (as each term is defined in the Ravina Employment Agreement), provided such termination constitutes a separation from service under

Section 409A of the Code and subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to receive (i) a pro-rated portion of his 2020 target bonus, if such resignation occurs prior to payment of the 2020 annual bonus (ii) base salary continuation for nine months following termination and (iii) subject to Dr. Ravina's timely election to continue COBRA health coverage, payment of the monthly premium that that we would have paid to provide health insurance to Dr. Ravina had he remained employed with us until the earliest of (A) nine months following termination, (B) Dr. Ravina's eligibility for group health insurance coverage through a new employer or (C) the date Dr. Ravina ceases to be eligible for COBRA continuation coverage. In addition, in the event that Dr. Ravina's employment is terminated by us without cause or Dr. Ravina resigns for good reason, in either case within three months before or 12 months following a "change of control" (as defined in the Ravina Employment Agreement), subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor, he will be entitled to accelerated vesting of 100% of all stock options and other stock-based awards that he holds.

Outstanding Equity Awards at 2019 Fiscal Year-End

The following table sets forth information regarding outstanding equity awards held by our named executive officers as of December 31, 2019.

			Option Awards			
Name	Grant Date	Vesting Commencement Date	Number of Securities Underlying Unexercised Options (#) Exercisable (1)	Number of Securities Underlying Unexercised Options (#) Unexercisable (1)	Option Exercise Price ($)	Option Expiration Date
Kiran Reddy, M.D.	10/19/2018	10/6/2015	494,186	–	1.06	10/18/2028
Stuart Chaffee, Ph.D.	10/19/2018	11/20/2017	194,555	178,991	1.06	10/18/2028
Bernard Ravina, M.D.	10/19/2018	8/21/2018	139,457	278,915	1.06	10/18/2028

(1) The stock options vest over four years, with 25% of the total shares vesting on the first anniversary of the vesting commencement date and the remainder vesting in 36 approximately equal monthly installments.

Compensation Risk Assessment

We believe that although a portion of the compensation provided to our executive officers and other employees is performance-based, our executive compensation program does not encourage excessive or unnecessary risk taking. This is primarily due to the fact that our compensation programs are designed to encourage our executive officers and other employees to remain focused on both short-term and long-term strategic goals. As a result, we do not believe that our compensation programs are reasonably likely to have a material adverse effect on us.

Employee Benefit and Equity Compensation Plans

2017 Stock Incentive Plan

The Praxis Precision Medicines, Inc. 2017 Stock Incentive Plan, or our 2017 Plan, was approved by our board of directors and our stockholders in May 2017 and was most recently amended in June 2020. Under the 2017 Plan, as amended through the date hereof, we have reserved for issuance an aggregate of 8,366,813 shares of our common stock. The number of shares of common stock reserved for issuance is subject to adjustment in the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event or any dividend or distribution to holders of common stock other than an ordinary cash dividend.

The shares of common stock underlying awards that are expired, lapsed, terminated, surrendered, canceled without having been fully exercised or forfeited in whole or in part (including as a result of shares of common stock subject to such award being repurchased by us at or below the original issuance price), and shares of common stock that are withheld upon exercise of an option or settlement of an award to cover the exercise price or tax withholding are added back to the shares of common stock available for issuance under the 2017 Plan. Following this offering, such shares will be added to the shares of common stock available under the 2020 Plan.

Our board of directors has acted as administrator of the 2017 Plan. The administrator has full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted, and to determine the specific terms and conditions of each award, subject to the provisions of the 2017 Plan. Persons eligible to participate in the 2017 Plan are those employees, officers and directors of, and consultants and advisors to, our company as selected from time to time by the administrator in its discretion.

The 2017 Plan permits the granting of (1) options to purchase common stock intended to qualify as incentive stock options under Section 422 of the Internal Revenue Code of 1986, as amended, or the Code, and (2) options that do not so qualify. The per share option exercise price of each option is determined by the administrator but may not be less than 100% of the fair market value of the common stock on the date of grant. The term of each option is fixed by the administrator but may not exceed 10 years from the date of grant. The administrator determines at what time or times each option may be exercised. In addition, the 2017 Plan permits the granting of restricted shares of common stock, restricted stock units and other stock-based awards, including but not limited to stock appreciation rights and awards entitling recipients to receive shares of common stock to be delivered in the future. Other stock-based awards may be paid in shares of common stock or in cash, as determined by our board of directors.

The 2017 Plan provides that upon the occurrence of a “reorganization event,” as defined in the 2017 Plan, our board of directors may take one or more of the following actions as to all or any (or any portion of) awards outstanding under the 2017 Plan other than restricted stock awards: (i) provide that awards will be assumed or substituted by the acquiring or successor corporation, (ii) upon written notice to participants, provide that all unexercised awards will terminate immediately prior to the consummation of the reorganization event unless exercised by the participant within a specified period following the date of such notice, (iii) provide that outstanding awards shall become exercisable, realizable or deliverable, or that all restrictions applicable to such awards shall lapse, in whole or in part, prior to or upon such reorganization event, (iv) make or provide for a cash payment to the award holder equal to the excess, if any, of the per share cash consideration in the reorganization event times the number of shares subject to the participant’s award over any aggregate exercise price of such outstanding award and any applicable tax withholdings in exchange for the termination of such awards, (v) provide that, in connection with a liquidation or dissolution of our company, awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. Upon the occurrence of a reorganization event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company under each outstanding restricted stock award shall inure to the benefit of our successor and shall, unless our board of directors determines otherwise, apply to the cash, securities or other property which the common stock was converted into or exchanged for pursuant to such reorganization event in the same manner and to the same extent as they applied to the common stock subject to such restricted stock award. Upon the occurrence of a reorganization event involving the liquidation or dissolution of our company (except as otherwise provided for in the award agreement), all restrictions and conditions on all outstanding restricted stock awards will be automatically deemed terminated or satisfied.

The administrator may amend, suspend or terminate the 2017 Plan at any time, subject to stockholder approval where such approval is required by applicable law. The administrator of the 2017 Plan may also amend or cancel any outstanding award, provided that no amendment to an award may adversely affect a participant's rights without his or her consent. The administrator of the 2017 Plan is specifically authorized to exercise its discretion to reduce the exercise price of outstanding awards under the 2017 Plan or effect the repricing of such awards through cancellation and re-grants without stockholder approval.

The 2017 Plan will terminate automatically upon the earlier of 10 years from the date on which the 2017 Plan was adopted by our board of directors or 10 years from the date the 2017 Plan was approved by our stockholders. As of June 30, 2020, options to purchase 6,891,313 shares of common stock were outstanding under the 2017 Plan. Our board of directors has determined not to make any further awards under the 2017 Plan following the closing of this offering.

2020 Stock Option and Incentive Plan

Our 2020 Plan was adopted by our board of directors on , 2020, approved by our stockholders on , 2020 and will become effective upon the date immediately preceding the date on which the registration statement of which this prospectus is part is declared effective by the SEC. The 2020 Plan will replace the 2017 Plan as our board of directors has determined not to make additional awards under the 2017 Plan following the closing of our initial public offering. However, the 2017 Plan will continue to govern outstanding equity awards granted thereunder. The 2020 Plan allows us to make equity-based and cash-based incentive awards to our officers, employees, directors and consultants.

We have initially reserved shares of our common stock, or the Initial Limit, for the issuance of awards under the 2020 Plan. The 2020 Plan provides that the number of shares reserved and available for issuance under the 2020 Plan will automatically increase each January 1, beginning on January 1, 2021, by % of the outstanding number of shares of our common stock on the immediately preceding December 31, or such lesser number of shares as determined by our compensation committee, or the Annual Increase. These limits are subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

The shares we issue under the 2020 Plan will be authorized but unissued shares or shares that we reacquire. The shares of common stock underlying awards under the 2020 Plan or the 2017 Plan that are forfeited, cancelled, held back upon exercise or settlement of an award to satisfy the exercise price or tax withholding, reacquired by us prior to vesting, satisfied without the issuance of stock, expire or are otherwise terminated (other than by exercise) will be added back to the shares of common stock available for issuance under the 2020 Plan.

The maximum aggregate number of shares that may be issued in the form of incentive stock options shall not exceed the Initial Limit cumulatively increased on January 1, 2021 and on each January 1 thereafter by the lesser of the Annual Increase for such year or shares of common stock.

The grant date fair value of all awards made under our 2020 Plan and all other cash compensation paid by us to any non-employee director in any calendar year for services as a non-employee director shall not exceed $; provided, however, that such amount shall be $ for the calendar year in which the applicable non-employee director is initially elected or appointed to the board of directors.

The 2020 Plan will be administered by our compensation committee. Our compensation committee has full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted and the number of shares subject to such awards, to make any combination of awards

to participants, to accelerate at any time the exercisability or vesting of any award and to determine the specific terms and conditions of each award, subject to the provisions of the 2020 Plan. Persons eligible to participate in the 2020 Plan will be those full or part-time officers, employees, non-employee directors and consultants as selected from time to time by our compensation committee in its discretion.

The 2020 Plan permits the granting of both options to purchase common stock intended to qualify as incentive stock options under Section 422 of the Code, and options that do not so qualify. The option exercise price of each option will be determined by our compensation committee but may not be less than 100% of the fair market value of our common stock on the date of grant unless the option is granted (i) pursuant to a transaction described in, and in a manner consistent with, Section 424(a) of the Code or (ii) to individuals who are not subject to U.S. income tax. The term of each option will be fixed by our compensation committee and may not exceed 10 years from the date of grant. Our compensation committee will determine at what time or times each option may be exercised.

Our compensation committee may award stock appreciation rights subject to such conditions and restrictions as it may determine. Stock appreciation rights entitle the recipient to shares of common stock, or cash, equal to the value of the appreciation in our stock price over the exercise price. The exercise price of each stock appreciation right may not be less than 100% of the fair market value of our common stock on the date of grant. The term of each stock appreciation right will be fixed by our compensation committee and may not exceed 10 years from the date of grant. Our compensation committee will determine at what time or times each stock appreciation right may be exercised.

Our compensation committee may award restricted shares of common stock and restricted stock units to participants subject to such conditions and restrictions as it may determine. These conditions and restrictions may include the achievement of certain performance goals and/or continued employment with us through a specified vesting period. Our compensation committee may also grant shares of common stock that are free from any restrictions under the 2020 Plan. Unrestricted stock may be granted to participants in recognition of past services or other valid consideration and may be issued in lieu of cash compensation due to such participant.

Our compensation committee may grant dividend equivalent rights to participants that entitle the recipient to receive credits for dividends that would be paid if the recipient had held a specified number of shares of our common stock.

Our compensation committee may grant cash bonuses under the 2020 Plan to participants, subject to the achievement of certain performance goals.

The 2020 Plan provides that upon the effectiveness of a “sale event,” as defined in the 2020 Plan, an acquirer or successor entity may assume, continue or substitute outstanding awards under the 2020 Plan. To the extent that awards granted under the 2020 Plan are not assumed or continued or substituted by the successor entity, upon the effective time of the sale event, such awards shall terminate. In such case, except as may be otherwise provided in the relevant award certificate, all awards with time-based vesting, conditions or restrictions shall become fully vested and nonforfeitable as of the effective time of the sale event, and all awards with conditions and restrictions relating to the attainment of performance goals may become vested and nonforfeitable in connection with a sale event in the administrator’s discretion or to the extent specified in the relevant award certificate]. In the event of such termination, individuals holding options and stock appreciation rights will be permitted to exercise such options and stock appreciation rights (to the extent exercisable) within a specified period of time prior to the sale event. In addition, in connection with the termination of the 2020 Plan upon a sale event, we may make or provide for a payment, in cash or in kind, to participants holding vested and exercisable options and stock appreciation rights equal to the difference between the per share

consideration payable to stockholders in the sale event and the exercise price of the options or stock appreciation rights and we may make or provide for a payment, in cash or in kind, to participants holding other vested awards.

Our board of directors may amend or discontinue the 2020 Plan and our compensation committee may amend or cancel outstanding awards for purposes of satisfying changes in law or any other lawful purpose but no such action may adversely affect rights under an award without the holder's consent. Certain amendments to the 2020 Plan require the approval of our stockholders. The administrator of the 2020 Plan is specifically authorized to exercise its discretion to reduce the exercise price of outstanding stock options and stock appreciation rights or effect the repricing of such awards through cancellation and re-grants without stockholder consent. No awards may be granted under the 2020 Plan after the date that is 10 years from the effective date of the 2020 Plan. No awards under the 2020 Plan have been made prior to the date of this prospectus.

2020 Employee Stock Purchase Plan

Our 2020 Employee Stock Purchase Plan, or the 2020 ESPP, was adopted by our board of directors on 2020, approved by our stockholders on 2020 and will become effective on the date immediately preceding the date on which the registration statement of which this prospectus is part is declared effective by the SEC. The 2020 ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Code. The 2020 ESPP initially reserves and authorizes the issuance of up to a total of shares of common stock to participating employees. The 2020 ESPP provides that the number of shares reserved and available for issuance will automatically increase on January 1, 2021 and each January 1 thereafter through January 1, 2030, by the least of (i) shares of common stock, (ii) % of the outstanding number of shares of our common stock on the immediately preceding December 31 or (iii) such lesser number of shares of common stock as determined by the administrator of the 2020 ESPP. The number of shares reserved under the 2020 ESPP is subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

All employees whose customary employment is for more than 20 hours per week are eligible to participate in the ESPP. However, any employee who owns 5% or more of the total combined voting power or value of all classes of stock will not be eligible to purchase shares under the 2020 ESPP.

We may make one or more offerings each year to our employees to purchase shares under the ESPP. Offerings will usually begin on each and and will continue for six-month periods, referred to as offering periods. Each eligible employee may elect to participate in any offering by submitting an enrollment form at least 15 business days before the relevant offering date.

Each employee who is a participant in the 2020 ESPP may purchase shares by authorizing payroll deductions of up to % of his or her eligible compensation during an offering period. Unless the participating employee has previously withdrawn from the offering, his or her accumulated payroll deductions will be used to purchase shares of common stock on the last business day of the offering period at a price equal to % of the fair market value of the shares on the first business day or the last business day of the offering period, whichever is lower, provided that no more than shares of common stock may be purchased by any one employee during any offering period. Under applicable tax rules, an employee may purchase no more than $25,000 worth of shares of common stock, valued at the start of the purchase period, under the ESPP in any calendar year.

The accumulated payroll deductions of any employee who is not a participant on the last day of an offering period will be refunded. An employee's rights under the 2020 ESPP terminate upon voluntary withdrawal from the plan or when the employee ceases employment with us for any reason.

The 2020 ESPP may be terminated or amended by our board of directors at any time. An amendment that increases the number of shares of common stock authorized under the 2020 ESPP and certain other amendments require the approval of our stockholders.

Senior Executive Cash Incentive Bonus Plan

On , 2020, our board of directors adopted the Senior Executive Cash Incentive Bonus Plan, or the Bonus Plan. The Bonus Plan provides for annual cash bonus payments based upon company and individual performance targets established by our compensation committee. The payment targets will be related to financial, clinical and operational measures or objectives with respect to our company, or the Corporate Performance Goals, as well as individual performance objectives.

Our compensation committee may select Corporate Performance Goals from among the following: cash flow (including, but not limited to, operating cash flow and free cash flow); research and development, publication, clinical and/or regulatory milestones; revenue; corporate revenue; earnings before interest, taxes, depreciation and amortization; net income (loss) (either before or after interest, taxes, depreciation and/or amortization); changes in the market price of our common stock; economic value-added; acquisitions or strategic transactions; operating income (loss); return on capital, assets, equity, or investment; stockholder returns; return on sales; gross or net profit levels; productivity; expense efficiency; margins; operating efficiency; customer satisfaction; working capital; earnings (loss) per share of our common stock; bookings, new bookings or renewals; sales or market shares; number of customers, number of new customers or customer references; operating income and/or net annual recurring revenue, any of which may be measured in absolute terms, as compared to any incremental increase, in terms of growth, or as compared to results of a peer group, against the market as a whole, compared to applicable market indices and/or measured on a pre-tax or post-tax basis.

Each executive officer who is selected to participate in the Bonus Plan will have a target bonus opportunity set for each performance period. The bonus formulas will be adopted in each performance period by the compensation committee and communicated to each executive. The Corporate Performance Goals will be measured at the end of each performance period after our financial reports have been published or such other appropriate time as the compensation committee determines. If the corporate performance goals and individual performance objectives are met, payments will be made as soon as practicable following the end of each performance period, but not later than 74 days after the end of the fiscal year in which such performance period ends. Subject to the rights contained in any agreement between the executive officer and us, an executive officer must be employed by us on the bonus payment date to be eligible to receive a bonus payment. The Bonus Plan also permits the compensation committee to approve additional bonuses to executive officers in its sole discretion.

401(k) Plan

We participate in a retirement savings plan, or 401(k) plan, that is intended to qualify for favorable tax treatment under Section 401(a) of the Code, and contains a cash or deferred feature that is intended to meet the requirements of Section 401(k) of the Code. U.S. employees who are at least 18 years of age are generally eligible to participate in the 401(k) plan, subject to certain criteria. Participants may make pre-tax and certain after-tax (Roth) salary deferral contributions to the plan from their eligible earnings up to the statutorily prescribed annual limit under the Code. Participants who are 50 years of age or older may contribute additional amounts based on the statutory limits for catch-up contributions. Participant contributions are held in trust as required by law. An employee's interest in his or her salary deferral contributions is 100% vested when contributed. We have the ability to make matching and discretionary contributions under the plan but did not make any contributions to the 401(k) plan in 2019.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from the director or officer. The director or officer may amend or terminate the plan in limited circumstances. Our directors and executive officers may also buy or sell additional shares of our common stock outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information.

DIRECTOR COMPENSATION

The following table presents the total compensation for each person who served as a non-employee member of our board of directors during the year ended December 31, 2019. Other than as set forth in the table and described more fully below, we did not pay any compensation, make any equity awards or non-equity awards to or pay any other compensation to any of the non-employee members of our board of directors in 2019 for their services as members of the board of directors. Amounts paid to Dr. Reddy, our former President and Chief Executive Officer, for his service as employees during 2019 are presented above in the "2019 Summary Compensation Table" above. Dr. Reddy did not receive any compensation for his services as director for the fiscal year ended December 31, 2019.

2019 Director Compensation Table

Name	Fees Earned or Paid in Cash ($)	Stock Awards ($)	Option Awards ($)(1)(2)	All Other Compensation ($)	Total ($)
Nicholas Galakatos, Ph.D.	–	–	–	–	–
Thomas Dyrberg, M.D.	–	–	–	–	–
Stefan Vitorovic	–	–	–	–	–
Ari Brettman, M.D.	–	–	–	–	–
Paul Medeiros	–	–	–	–	–
Gregory Norden	–	–	62,815	–	62,815
Alfred Sandrock(3)	–	–	–	–	–
William Young	–	–	–	–	–

(1) The amount reported represents the aggregate grant date fair value of the stock option awarded to Mr. Norden during fiscal year 2019, calculated in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718. Such grant date fair values do not take into account any estimated forfeitures. The assumptions used in calculating the grant date fair value of the stock options reported in this column are set forth in Note 11 of our consolidated financial statements included elsewhere in this prospectus. The amounts reported in this column reflect the accounting cost for these stock options and do not correspond to the actual economic value that may be received by our directors upon the exercise of the stock options or any sale of the underlying shares of common stock.

(2) Each option grant is subject to the terms of our 2017 Plan. Mr. Norden received an option to purchase 59,767 shares of our common stock, which vested as to 25% of the total shares on December 20, 2019, with the remainder vesting in 36 approximately equal monthly installments over the following three years. As of December 31, 2019, Mr. Norden held options to purchase 59,767 shares of our common stock and Mr. Sandrock and Mr. Young each held options to purchase 59,879 shares of our common stock.

(3) Mr. Sandrock resigned as a director in March 2020 and continues to serve in an advisory capacity.

Non-Employee Director Compensation Policy

In connection with this offering, we intend to adopt a non-employee director compensation policy that will become effective upon the completion of this offering and will be designed to enable us to attract and retain, on a long-term basis, highly qualified non-employee directors. Under the policy, each director who is not an employee will be paid cash compensation from and after the completion of this offering, as set forth below:

	Annual Retainer
Board of Directors:	
Members	$
Additional retainer for non-executive chair	$
Audit Committee:	
Members (other than chair)	$
Retainer for chair	$
Compensation Committee:	
Members (other than chair)	$
Retainer for chair	$
Nominating and Corporate Governance Committee:	
Members (other than chair)	$
Retainer for chair	$

In addition, the non-employee director compensation policy will provide that, upon initial election to our board of directors, each non-employee director will be granted an equity award with a grant date fair value of $, or the Initial Grant. The Initial Grant will vest in equal installments on the first, second and third anniversaries of the grant date, subject to continued service as a director through the applicable vesting date. Furthermore, on the date of each annual meeting of stockholders following the completion of this offering, each non-employee director who continues as a non-employee director following such meeting will be granted an annual an equity award a grant date fair value of $, or the Annual Grant. The Annual Grant will vest in full on the earlier of (i) the first anniversary of the grant date or (ii) our next annual meeting of stockholders, subject to continued service as a director through the applicable vesting date. Such awards are subject to full accelerated vesting upon the sale of the company.

We will reimburse all reasonable out-of-pocket expenses incurred by non-employee directors in attending meetings of the board of directors and committees.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

Other than the compensation agreements and other arrangements described under “Executive Compensation” and “Director Compensation” in this prospectus and the transactions described below, since January 1, 2017, there has not been, and there is not currently proposed, any transaction or series of similar transactions to which we were, or will be, a party in which the amount involved exceeded, or will exceed, $120,000 and in which any director, executive officer, holder of five percent or more of any class of our capital stock or any member of the immediate family of, or entities affiliated with, any of the foregoing persons, had, or will have, a direct or indirect material interest.

Sales and Purchases of Securities

Series A Preferred Stock Financing

From October 2016 to July 2017, we issued and sold to investors in private placements an aggregate of 6,100,000 shares of our Series A preferred stock at a price of $1.00 per share, for aggregate consideration of $6.1 million. In October 2016, we also issued and sold an aggregate of 1,375,799 shares of Series A preferred stock upon the conversion of a series of convertible promissory notes previously issued to Clarus Lifesciences III, L.P., or Clarus, or the 2016 Notes, at a conversion price of $0.75 per share. We refer to these transactions collectively as our Series A Preferred Stock Financing. The following table sets forth the aggregate number and purchase price of shares of our Series A preferred stock purchased by related persons:

Purchaser	Shares of Series A Preferred Stock Purchased	Aggregate Purchase Price ($)
Entities affiliated with Blackstone(1)	7,375,799	7,031,849
Total	7,375,799	7,031,849

(1) Nicholas Galakatos, Ph.D., a member of our board of directors, was a managing director of Clarus, prior to its acquisition by The Blackstone Group Inc., or Blackstone, and is a senior managing director of Blackstone. Ari Brettman, M.D. a member of our board of directors, was a principal at Clarus, prior to its acquisition by Blackstone, and is a managing director of Blackstone.

Convertible Promissory Note Financings

In December 2017 and January 2018, we issued convertible promissory notes to Clarus, collectively the Convertible Notes, for $2.0 million and $1.0 million, respectively. The Convertible Notes were settled in March 2018 upon their automatic conversion into shares of our Series B preferred stock, as described below.

Nicholas Galakatos, Ph.D., a member of our board of directors, was a managing director of Clarus, prior to its acquisition by Blackstone, and is a senior managing director of Blackstone. Ari Brettman, M.D. a member of our board of directors, was a principal at Clarus, prior to its acquisition by Blackstone, and is a managing director of Blackstone.

Series B Preferred Stock Financing

During the year ended December 31, 2018, we issued a total of 12,333,333 shares of Series B preferred stock in two separate closings at a purchase price of $3.00 per share for gross cash proceeds of $37.0 million, and incurred issuance costs of $0.2 million. We also issued an aggregate of 1,286,185 shares of Series B preferred stock upon the conversion of the Convertible Notes at an average conversion price of $2.40 per share. We also issued 1,294,186 shares of Series B preferred stock in connection with the anti-dilutive provision within the Purdue License Agreement. The following

table sets forth the aggregate number and purchase price of shares of our Series B preferred stock purchased by related persons:

Purchaser	Shares of Series B Preferred Stock Purchased	Aggregate Purchase Price ($)
Entities affiliated with Blackstone(1)	5,052,852	14,337,643
Novo Holdings A/S(2)	4,150,000	12,450,000.00
Vida Ventures, LLC(3)	4,150,000	12,450,000.00
Total	13,352,852	39,237,643

(1) Nicholas Galakatos, Ph.D., a member of our board of directors, was a managing director of Clarus, prior to its acquisition by Blackstone, and is a senior managing director of Blackstone. Ari Brettman, M.D. a member of our board of directors, was a principal at Clarus, prior to its acquisition by Blackstone, and is a managing director of Blackstone.
(2) Thomas Dyrberg, M.D., a member of our board of directors, is a managing director of Novo Holdings A/S.
(3) Stefan Vitorovic, a member of our board of directors, is a managing director of Vida Ventures, LLC.

Series B-1 Preferred Stock Financing

In June 2019, we issued and sold to investors in a private placement an aggregate of 2,666,666 shares of our Series B-1 preferred stock at a price of $3.75 per share, for aggregate consideration of approximately $10.0 million, or our Series B-1 Preferred Stock Financing. The following table sets forth the aggregate number and purchase price of shares of our Series B-1 preferred stock purchased by related persons:

Purchaser	Shares of Series B-1 Preferred Stock Purchased	Aggregate Purchase Price ($)
Entities affiliated with Blackstone(1)	1,410,477	5,289,288
Novo Holdings A/S(2)	551,794	2,069,228
Vida Ventures, LLC(3)	551,794	2,069,228
Purdue Neuroscience Company(4)	133,334	500,003
Total	2,647,399	9,927,747

(1) Nicholas Galakatos, Ph.D., a member of our board of directors, was a managing director of Clarus, prior to its acquisition by Blackstone, and is a senior managing director of Blackstone. Ari Brettman, M.D. a member of our board of directors, was a principal at Clarus, prior to its acquisition by Blackstone, and is a managing director of Blackstone.
(2) Thomas Dyrberg, M.D., a member of our board of directors, is a managing director of Novo Holdings A/S.
(3) Stefan Vitorovic, a member of our board of directors, is a managing director of Vida Ventures, LLC.
(4) Purdue Neuroscience Company became a holder of five percent or more of our capital stock pursuant to our Series B-1 Preferred Financing, but is no longer a holder of five percent or more of our capital stock as of December 2019. Paul Medeiros, a member of our board of directors, is a senior vice president of Purdue Pharma L.P., an affiliate of Purdue Neuroscience Company.

Series C Preferred Stock Financing

From November 2019 through May 2020, we issued and sold to investors in a private placement an aggregate of 14,368,935 shares of our Series C preferred stock at a price of $5.15 per share, for

aggregate consideration of approximately $74.0 million, or our Series C Preferred Stock Financing. The following table sets forth the aggregate number and purchase price of shares of our Series C preferred stock purchased by related persons:

Purchaser	Shares of Series C Preferred Stock Purchased	Aggregate Purchase Price ($)
Entities affiliated with Blackstone (1)	2,500,956	12,879,923
Novo Holdings A/S(2)	171,410	882,762
Vida Ventures, LLC(3)	171,410	882,762
Entities affiliated with Eventide(4)	3,883,496	20,000,004
Purdue Neuroscience Company(5)	59,333	305,565
Total	6,786,605	34,951,016

(1) Ari Brettman, M.D., and Nicholas Galakatos, Ph.D., members of our board of directors, are a managing director and senior managing director, respectively, of Blackstone, an affiliate of Clarus and BSOF Parallel Master Fund L.P., or BSOF. Kiran Reddy, M.D. a member of our board of directors and our former president and chief executive officer, is a managing director of Blackstone, an affiliate of Clarus and BSOF.
(2) Thomas Dyrberg, M.D., a member of our board of directors, is a managing director of Novo Holdings A/S.
(3) Stefan Vitorovic, a member of our board of directors, is a managing director of Vida Ventures, LLC.
(4) Mutual Fund Series Trust, On Behalf of Eventide Healthcare & Life Sciences Fund, or Eventide Healthcare, and Mutual Fund Series Trust, On Behalf of Eventide Gilead Fund, or Eventide Gilead, together became a holder of five percent or more of our capital stock pursuant to our Series C Preferred Stock Financing.
(5) Purdue Neuroscience Company is no longer a holder of five percent or more of our capital stock as of December 2019. Paul Medeiros, a member of our board of directors, is a senior vice president of Purdue Pharma L.P., an affiliate of Purdue Neuroscience Company.

Series C Repurchase

On February 2020 and March 2020, we repurchased from certain holders of five percent or more of our capital stock an aggregate of 5,825,243 shares of our Series C preferred stock at a price of $5.15 per share, for an aggregate consideration of approximately $30.0 million, or the Series C Repurchase. The following table sets forth the aggregate number and purchase price of shares of our Series C preferred stock repurchased by us from related persons:

Name of Holder	Shares of Series C Preferred Stock Repurchased	Aggregate Purchase Price ($)
Entities affiliated with RTW	2,912,622	15,000,003
Entities affiliated with Venrock	2,912,621	14,999,998
Total	5,825,243	30,000,001

Commercial Agreements with Related Parties

Purdue

In December 2017, we and Purdue Neuroscience Company, or Purdue, a greater than 5% stockholder entered into a license agreement, described in the section of this prospectus captioned “Business—Third-Party Licenses.” Paul Medeiros, member of our board of directors, serves as a Senior Vice President of Purdue Pharma L.P.

RogCon

In December 2018, we entered into a agreement with RogCon Inc., or RogCon, pursuant to which we agreed to advance RogCon a deposit of up to $1.0 million related to the cooperation and license agreement described below. The amounts funded to RogCon under this agreement were applied towards the purchase price of the license agreement with RogCon described below.

In September 2019, we entered into a cooperation and license agreement with RogCon, described in the section of this prospectus captioned "Business—Third-Party Licenses."

Alex Nemiroff, our general counsel and secretary, is a co-founder and chief executive officer of RogCon.

Underwriting Arrangements

Blackstone Securities Partners L.P., an affiliate of Blackstone, is an underwriter in the initial public offering of our common stock and shall be entitled to commissions and fees on substantially similar terms as our other underwriters. Ari Brettman, M.D., and Nicholas Galakatos, Ph.D., members of our board of directors, are a managing director and senior managing director, respectively, of Blackstone. For more information regarding our agreement with the underwriters for this offering, see the section titled "Underwriting."

Other Arrangements

In March 2020, we reimbursed an affiliate of Blackstone approximately $164,000 in third-party expenses related to the recruitment of our chief executive officer.

Indemnification Agreements

Prior to the closing of this offering, we intend to enter agreements to indemnify our directors and certain executive officers. These agreements will, among other things, require us to indemnify these individuals for certain expenses (including attorneys' fees), judgments, fines and settlement amounts reasonably incurred by such person in any action or proceeding, including any action by or in our right, on account of any services undertaken by such person on behalf of our company or that person's status as a member of our board of directors to the maximum extent allowed under Delaware law.

Agreements with Stockholders

In connection with our Series A preferred stock financing, our Series B preferred stock financing, our Series B-1 preferred stock financing and our Series C preferred stock financing, we entered into investors' rights, voting and right of first refusal and co-sale agreements containing registration rights, information rights, voting rights and rights of first refusal, among other things, with certain holders of our preferred stock and certain holders of our common stock. These stockholder agreements will terminate upon the closing of this offering, except for the registration rights granted under our investors' rights agreement, as more fully described in "Description of Capital Stock—Registration Rights."

Policies for Approval of Related Party Transactions

Our board of directors reviews and approves transactions with directors, officers and holders of five percent or more of our voting securities and their affiliates, each a related party. Prior to this offering, the material facts as to the related party's relationship or interest in the transaction are disclosed to our board of directors prior to their consideration of such transaction, and the transaction is not considered approved by our board of directors unless a majority of the directors who are not interested in the transaction approve the transaction. Further, when stockholders are entitled to vote on a transaction with a related party, the material facts of the related party's relationship or interest in the transaction are disclosed to the stockholders, who must approve the transaction in good faith.

In connection with this offering, we intend to adopt a formal written policy that our executive officers, directors, holders of more than five percent of any class of our voting securities, and any member of the immediate family of and any entity affiliated with any of the foregoing persons, are not permitted to enter into a related party transaction with us without the prior consent of our audit committee, or other independent members of our board of directors in the event it is inappropriate for our audit committee to review such transaction due to a conflict of interest. Any request for us to enter into a transaction with an executive officer, director, holders of more than 5% of any class of our voting securities, or any of their immediate family members or affiliates, in which the amount involved exceeds $120,000 must first be presented to our audit committee for review, consideration and approval. In approving or rejecting any such proposal, our audit committee will consider the relevant facts and circumstances available and deemed relevant to our audit committee, including, but not limited to, whether the transaction will be on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related party's interest in the transaction. All of the transactions described in this section were entered into prior to the adoption of this policy.

PRINCIPAL STOCKHOLDERS

The following table sets forth certain information known to us regarding beneficial ownership of our capital stock as of June 30, 2020, as adjusted to reflect the sale of common stock offered by us in this offering, for:

- each person or group of affiliated persons known by us to be the beneficial owner of more than five percent of our capital stock;
- each of our named executive officers;
- each of our directors; and
- all of our executive officers and directors as a group.

To the extent that the underwriters sell more than shares in this offering, the underwriters have the option to purchase up to an additional shares at the initial public offering price less the underwriting discount.

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Under those rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power. Except as noted by footnote, and subject to community property laws where applicable, we believe, based on the information provided to us, that the persons and entities named in the table below have sole voting and investment power with respect to all common stock shown as beneficially owned by them.

The percentage of beneficial ownership prior to this offering in the table below is based on shares of common stock deemed to be outstanding as of , assuming the conversion of all outstanding shares of our preferred stock upon the closing of this offering, and the percentage of beneficial ownership after this offering in the table below is based on shares of common stock assumed to be outstanding after the closing of the offering. The information in the table below assumes no exercise of the underwriters' option to purchase additional shares. Options to purchase shares of common stock that are exercisable within 60 days of are deemed to be beneficially owned by the persons holding these options for the purpose of computing percentage ownership of that person, but are not treated as outstanding for the purpose of computing any other person's ownership percentage.

Name and Address of Beneficial Owner (1)	Shares Beneficially Owned	Percentage of Shares Beneficially Owned	
		Before Offering	After Offering
5% Stockholders:			
Entities affiliated with Blackstone.(2)			
Novo Holdings A/S(3)			
Vida Ventures, LLC(4)			
Eventide Healthcare & Life Sciences Fund(5)			
Named Executive Officers and Directors:			
Nicholas Galakatos, Ph.D.(2)			
Ari Brettman, M.D.(2)			
Thomas Dyrberg, M.D.(3)			
Stefan Vitorovic(4)			
William Young(6)			
Paul Medeiros(7)			
Gregory Norden(8)			
Kiran Reddy, M.D.(2)(9)			
Stuart Chaffee, Ph.D.(10)			
Bernard Ravina(11)			
Marcio Souza(12)			
All executive officers and directors as a group (12 persons)(13)			

* Represents beneficial ownership of less than one percent.

(1) Unless otherwise indicated, the address for each beneficial owner is c/o Praxis Precision Medicines, Inc., One Broadway, 16th Floor, Cambridge, MA 02142.

(2) Consists of (i) shares of common stock issuable upon conversion of shares of Series A preferred stock held by Clarus Lifesciences III, L.P. (“Clarus”); (ii) shares of common stock issuable upon conversion of shares of Series B preferred stock held by Clarus; (iii) shares of common stock issuable upon conversion of shares of Series B-1 preferred stock held by Clarus; (iv) shares of common stock issuable upon conversion of shares of Series C preferred stock held by Clarus; (iv) shares of common stock held by Clarus, and (v) shares of common stock issuable upon conversion of shares of Series C preferred stock held by BSOF Parallel Master Fund L.P. (together with Clarus, the “Blackstone Funds”). Clarus Ventures III GP, L.P. is the general partner of Clarus. Blackstone Clarus III L.L.C. is the general partner of Clarus GP. The sole member of Blackstone Clarus III L.L.C. is Blackstone Holdings II L.P. Blackstone Strategic Opportunity Associates L.L.C. is the general partner of BSOF Parallel Master Fund L.P. Blackstone Holdings II L.P. is the sole member of Blackstone Strategic Opportunity Associates L.L.C. Blackstone Alternative Solutions L.L.C. is the investment manager of BSOF Parallel Master Fund L.P. Blackstone Holdings I L.P. is the sole member of Blackstone Alternative Solutions L.L.C. The general partner of Blackstone Holdings I L.P. and Blackstone Holdings II L.P. is Blackstone Holdings I/II GP L.L.C. The sole member of Blackstone Holdings I/II GP L.L.C. is The Blackstone Group Inc. The sole holder of the Class C common stock of The Blackstone Group Inc. is Blackstone Group Management L.L.C. Blackstone Group Management L.L.C. is wholly-owned by Blackstone’s senior managing directors and controlled by its founder, Stephen A. Schwarzman. Each of such entities and Mr. Schwarzman may be deemed to beneficially own the shares beneficially owned by the Blackstone Funds controlled by it or him, but each (other than the

Blackstone Funds to the extent of their direct ownership) disclaims beneficial ownership of such shares. Each of Ari Brettman, M.D. Nicholas Galakatos, Ph.D., and Kiran Reddy, M.D. members of our board of directors, is an employee of an entity affiliated with the Blackstone Funds and each disclaims beneficial ownership of the shares beneficially owned by the Blackstone Funds. The address for each of Clarus and Clarus Ventures III GP, L.P. is c/o Clarus Ventures LLC, 101 Main Street, Suite 1210, Cambridge, MA 02142. The address for each of the other Blackstone entities and Mr. Schwarzman is c/o The Blackstone Group Inc., 345 Park Avenue, New York, NY 10154.

(3) Consists of (i) shares of common stock issuable upon conversion of shares of Series B preferred stock; (ii) shares of common stock issuable upon conversion of shares of Series B-1 preferred stock; and (iii) shares of common stock issuable upon the conversion of Series C preferred stock. All shares are held directly by Novo Holdings A/S, a Danish private limited liability company. Thomas Dyrberg is employed as a managing partner at Novo Holdings A/S and is also a member of our board of directors. Dr. Dyrberg is not deemed to hold any beneficial ownership or reportable pecuniary interest in the shares held by Novo Holdings A/S. The address for Novo Holdings A/S is Tuborg Havnevej 19, DK-2900 Hellerup, Denmark.

(4) Consists of (i) shares of common stock issuable upon conversion of shares of Series B preferred stock; (ii) shares of common stock issuable upon conversion of shares of Series B-1 preferred stock; and (iii) shares of common stock issuable upon conversion of shares of Series C preferred stock. All shares are held directly by Vida Ventures, LLC, a United States limited liability company. Stefan Vitorovic is a managing director of Vida Ventures, LLC and is also a member of our board of directors. Mr. Vitorovic disclaims beneficial ownership of such shares, except to the extent of his proportionate pecuniary interest therein, if any. The address for Vida Ventures, LLC is 40 Broad Street, Suite 201, Boston, MA 02109.

(5) Consists of (i) shares of common stock issuable upon conversion of shares of Series C preferred stock held by Mutual Fund Series Trust, On Behalf Of Eventide Healthcare & Life Sciences Fund, or Eventide Healthcare, and (ii) shares of common stock issuable upon conversion of shares of Series C preferred stock held by Mutual Fund Series Trust, On Behalf Of Eventide Gilead Fund, or Eventide Gilead. The address for both Eventide Healthcare and Eventide Gilead is One International Place, Suite 4210, Boston, Massachusetts 02110.

(6) Consists of options to purchase shares of common stock that are exercisable within 60 days of .

(7) Consists of (i) shares of common stock issuable upon conversion of shares of Series B preferred stock; (ii) shares of common stock issuable upon conversion of shares of Series B-1 preferred stock; and (iii) shares of common stock issuable upon conversion of shares of Series C preferred stock. All shares are held directly by Purdue Neuroscience Company, a United States corporation. Paul Medeiros is an executive of Purdue Pharma L.P., a general partner and majority equity owner of Purdue Neuroscience Company, and is also a member of our board of directors. Mr. Medeiros disclaims beneficial ownership of such shares, except to the extent of his proportionate pecuniary interest therein, if any. The address for Purdue Neuroscience Company is 201 Tresser Blvd, Stamford, CT 06901.

(8) Consists of options to purchase shares of common stock that are exercisable within 60 days of .

(9) Consists of shares of common stock and options to purchase shares of common stock that are exercisable within 60 days of .

(10) Consists of options to purchase shares of common stock that are exercisable within 60 days of .

(11) Consists of options to purchase shares of common stock that are exercisable within 60 days of .

(12) Consists of options to purchase shares of common stock that are exercisable within 60 days of .

(13) Consists of (i) shares of common stock and (ii) shares of common stock that are exercisable within 60 days of .

DESCRIPTION OF CAPITAL STOCK

The following descriptions are summaries of the material terms of our amended and restated certificate of incorporation and amended and restated bylaws which will become effective immediately upon the closing of this offering. The descriptions of the common stock and preferred stock give effect to changes to our capital structure that will occur immediately upon the closing of this offering. We refer in this section to our amended and restated certificate of incorporation as our certificate of incorporation, and we refer to our amended and restated bylaws as our bylaws.

General

Upon closing of this offering, our authorized capital stock will consist of shares of common stock, par value $0.0001 per share and shares of preferred stock, par value $0.0001 per share, all of which shares of preferred stock will be undesignated.

As of , shares of our common stock were outstanding and held by stockholders of record. This amount assumes the conversion of all outstanding shares of our preferred stock into common stock upon the closing of this offering. In addition, as of , we had outstanding options to purchase shares of our common stock under our 2017 Stock Incentive Plan, at a weighted average exercise price of $ per share, of which were exercisable.

Common Stock

The holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of the stockholders. The holders of our common stock do not have any cumulative voting rights. Holders of our common stock are entitled to receive ratably any dividends declared by our board of directors out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock. Our common stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions.

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any outstanding preferred stock. The shares to be issued by us in this offering will be, when issued and paid for, validly issued, fully paid and non-assessable.

Preferred stock

Immediately prior to the completion of this offering, all outstanding shares of our preferred stock will be converted into shares of our common stock. Upon the consummation of this offering, our board of directors will have the authority, without further action by our stockholders, to issue up to shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of our Company or other corporate action. Immediately after consummation of this offering, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock.

Registration rights

Upon the completion of this offering, the holders of shares of our common stock, including those issuable upon the conversion of preferred stock, will be entitled to rights with respect to the

registration of these securities under the Securities Act. These rights are provided under the terms of a third amended and restated investors' rights agreement between us and the holders of our preferred stock, or the investors' rights agreement. The investors' rights agreement includes demand registration rights, short-form registration rights and piggyback registration rights. All fees, costs and expenses of underwritten registrations under this agreement will be borne by us and all selling expenses, including underwriting discounts and selling commissions, will be borne by the holders of the shares being registered.

Demand registration rights

Beginning 180 days after the completion of this offering, the holders of shares of our common stock, including those issuable upon the conversion of shares of our preferred stock upon closing of this offering, will be entitled to demand registration rights. Under the terms of the investors' rights agreement, we will be required, upon the written request of holders of at least a majority of the securities eligible for registration then outstanding, and if anticipated aggregate offering price, net of related fees and expenses, would exceed $5 million, we will be required to file a registration statement covering all securities eligible for registration that our stockholders request to be included in such registration. We are required to effect only two registrations pursuant to this provision of the investors' rights agreement in any twelve-month period.

Short-form registration rights

Pursuant to the investors' rights agreement, if we are eligible to file a registration statement on Form S-3, upon the written request of stockholders holding at least a majority of the securities eligible for registration then outstanding, we will be required to file a Form S-3 registration restatement with respect to outstanding securities of such stockholders having an anticipated aggregate offering, net of related fees and expenses, of at least $3 million. We are required to effect only two registrations in any twelve-month period pursuant to this provision of the amended and restated investors' rights agreement. The right to have such shares registered on Form S-3 is further subject to other specified conditions and limitations.

Piggyback registration rights

Upon the completion of this offering, the holders of shares of our common stock, including those issuable upon the conversion of shares of our preferred stock upon closing of this offering, are entitled to piggyback registration rights. If we register any of our securities either for our own account or for the account of other security holders, the holders of these shares are entitled to include their shares in the registration. Subject to certain exceptions contained in the investor rights agreement, we and the underwriters may limit the number of shares included in the underwritten offering to the number of shares which we and the underwriters determine in our sole discretion will not jeopardize the success of the offering.

Indemnification

Our investors' rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

Expiration of registration rights

The demand registration rights and short-form registration rights granted under the investors' rights agreement will terminate on the earliest to occur of: (i) on the fifth anniversary of the completion of this offering or (ii) a merger, sale or liquidation of our company.

Anti-Takeover Effects of our Certificate of Incorporation and Bylaws and Delaware Law

Our amended and restated certificate of incorporation and amended and restated bylaws include a number of provisions that may have the effect of delaying, deferring or preventing another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Undesignated Preferred Stock

Our amended and restated certificate of incorporation provides for authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control.

Exclusive Jurisdiction for Certain Actions

Our amended and restated bylaws provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for state law claims for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our current or former directors, officers and employees to us or our stockholders, (iii) any action asserting a claim against us or any of our current or former directors, officers, or other employees or stockholders arising pursuant to any provision of the Delaware General Corporation Law, or the DGCL, our certificate of incorporation or our bylaws, (iv) any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or our bylaws or (v) any action asserting a claim against us or any of our current or former directors or officers or other employees that is governed by the internal affairs doctrine.

Section 203 of the Delaware General Corporation Law

Upon closing of this offering, we will be subject to the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances, but not the outstanding voting stock owned by the interested stockholder; or

- at or after the time the stockholder became interested, the business combination was approved by our board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

In general, Section 203 defines a business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, lease, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an “interested stockholder” as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Provisions of our amended and restated certificate of incorporation and our amended and restated bylaws may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock. Among other things, our amended and restated certificate of incorporation and amended and restated bylaws:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate;
- provide that the authorized number of directors may be changed only by resolution adopted by a majority of the board of directors;
- provide that the board of directors or any individual director may only be removed with cause and the affirmative vote of the holders of at least 66.67% of the voting power of all of our then outstanding common stock;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law or subject to the rights of holders of preferred stock as designated from time to time, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- divide our board of directors into three classes;
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent or electronic transmission;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner and also specify requirements as to the form and content of a stockholder’s notice;

- do not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose);
- provide that special meetings of our stockholders may be called only by our board of directors acting pursuant to a resolution approved by the affirmative vote of a majority of the directors then in office; and
- provide that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for state law claims for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our current or former directors, officers and employees to us or our stockholders, (iii) any action asserting a claim against us or any of our current or former directors, officers, or other employees or stockholders arising pursuant to any provision of the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws, (iv) any action to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or our amended and restated bylaws or (v) any action asserting a claim against us or any of our current or former directors or officers or other employees that is governed by the internal affairs doctrine.

The amendment of any of these provisions included in our amended and restated certificate of incorporation, with the exception of the ability of our board of directors to issue shares of preferred stock and designate any rights, preferences and privileges thereto, would require the affirmative vote of the majority of all of our then outstanding common stock. The amendment of any of these provisions included in our amended and restated bylaws would require the affirmative vote of the holders of at least 66.67% of the voting power of our then outstanding common stock.

Nasdaq Global Market Listing

We have applied to list our common stock on The Nasdaq Global Market under the trading symbol “PRAX.”

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is .

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our shares. Future sales of our common stock in the public market, or the availability of such shares for sale in the public market, could adversely affect market prices prevailing from time to time. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of our common stock in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price at such time and our ability to raise equity capital in the future.

Based on the number of shares outstanding as of upon the completion of this offering, shares of our common stock will be outstanding, assuming no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding options. Of the outstanding shares, all of the shares sold in this offering will be freely tradable, except that any shares held by our affiliates, as that term is defined in Rule 144 under the Securities Act, may only be sold in compliance with the limitations described below, and shares of our common stock are restricted shares of common stock subject to service-based vesting terms.

Sale of Restricted Shares

Based on the number of shares outstanding as of upon the completion of this offering, shares of our common stock will be outstanding, assuming no exercise of the underwriters' option to purchase additional shares and no exercise of outstanding options. Of the outstanding shares, all of the shares sold in this offering will be freely tradable, except that any shares held by our affiliates, as that term is defined in Rule 144 under the Securities Act, may only be sold in compliance with the limitations described below, and shares of our common stock are restricted shares of common stock subject to service-based vesting terms. These restricted securities were issued and sold by us, or will be issued and sold by us, in private transactions and are eligible for public sale only if registered under the Securities Act or if they qualify for an exemption from registration under the Securities Act, including the exemptions provided by Rule 144 or Rule 701, which rules are summarized below.

As a result of the lock-up agreements referred to below and the provisions of Rule 144 and Rule 701 under the Securities Act, the shares of our common stock (excluding the shares sold in this offering) that will be available for sale in the public market are as follows:

- beginning on the date of this prospectus, the shares of common stock sold in this offering will be immediately available for sale in the public market;
- beginning 181 days after the date of this prospectus, additional shares of common stock will become eligible for sale in the public market, of which shares will be held by affiliates and subject to the volume and other restrictions of Rule 144, as described below; and
- the remainder of the shares of common stock will be eligible for sale in the public market from time to time thereafter, subject in some cases to the volume and other restrictions of Rule 144, as described below.

Rule 144

In general, a person who has beneficially owned restricted stock for at least six months would be entitled to sell their securities provided that (i) such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale and (ii) we are subject to the Securities Exchange Act of 1934, as amended, or the Exchange Act, periodic reporting requirements for at least 90 days before the sale. Persons who have beneficially owned restricted shares for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale,

would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares then outstanding, which will equal approximately shares immediately after this offering, assuming no exercise of the underwriters' option to purchase additional shares, based on the number of shares outstanding as of ; or
- the average weekly trading volume of our common stock on The Nasdaq Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale;

provided, in each case, that we are subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144.

Rule 701

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and under "Underwriting" included elsewhere in this prospectus and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Lock-Up Agreements

We, all of our directors and executive officers, and the holders of all of our capital stock and securities convertible into or exchangeable for our capital stock have entered into lock-up agreements with the underwriters and/or are subject to market standoff agreements or other agreements with us, which prevents them from selling any of our common stock or any securities convertible into or exercisable or exchangeable for common stock for a period of not less than 180 days from the date of this prospectus without the prior written consent of the representatives, subject to certain exceptions. See the section entitled "Underwriting" appearing elsewhere in this prospectus for more information.

Registration rights

Upon completion of this offering, certain holders of our securities will be entitled to various rights with respect to registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. See the section entitled "Description of Capital Stock—Registration rights" appearing elsewhere in this prospectus for more information.

Equity incentive plans

We intend to file one or more registration statements on Form S-8 under the Securities Act to register our shares issued or reserved for issuance under our equity incentive plans. The first such registration statement is expected to be filed soon after the date of this prospectus and will automatically become effective upon filing with the SEC. Accordingly, shares registered under such registration statement will be available for sale in the open market, unless such shares are subject to vesting restrictions with us or the lock-up restrictions described above. As of , we estimate that such registration statement on Form S-8 will cover approximately shares.

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF COMMON STOCK

The following discussion is a summary of certain material U.S. federal income tax considerations applicable to non-U.S. holders (as defined below) with respect to their ownership and disposition of shares of our common stock issued pursuant to this offering. For purposes of this discussion, a non-U.S. holder means a beneficial owner of our common stock that is for U.S. federal income tax purposes:

- a non-resident alien individual;
- a foreign corporation or any other foreign organization taxable as a corporation for U.S. federal income tax purposes; or
- a foreign estate or trust, the income of which is not subject to U.S. federal income tax on a net income basis.

This discussion does not address the tax treatment of partnerships or other entities that are pass-through entities for U.S. federal income tax purposes or persons that hold their common stock through partnerships or other pass-through entities. A partner in a partnership or other pass-through entity that will hold our common stock should consult his, her or its tax advisor regarding the tax consequences of acquiring, holding and disposing of our common stock through a partnership or other pass-through entity, as applicable.

This discussion is based on current provisions of the U.S. Internal Revenue Code of 1986, as amended, which we refer to as the Code, existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus and, all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any such change or differing interpretation could alter the tax consequences to non-U.S. holders described in this prospectus. There can be no assurance that the Internal Revenue Service, which we refer to as the IRS, will not challenge one or more of the tax consequences described herein. We assume in this discussion that a non-U.S. holder holds shares of our common stock as a capital asset within the meaning of Section 1221 of the Code, which is generally property held for investment.

This discussion does not address all aspects of U.S. federal income taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances nor does it address any U.S. state, local or non-U.S. taxes, the alternative minimum tax, the Medicare tax on net investment income, the rules regarding qualified small business stock within the meaning of Section 1202 of the Code or "Section 1244 stock" within the meaning of Section 1244 of the Code, or any other aspect of any U.S. federal tax other than the income tax. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

- insurance companies;
- tax-exempt or governmental organizations;
- financial institutions;
- brokers or dealers in securities;
- regulated investment companies;
- pension plans;
- "controlled foreign corporations," "passive foreign investment companies" and corporations that accumulate earnings to avoid U.S. federal income tax;

- "qualified foreign pension funds," or entities wholly owned by a "qualified foreign pension fund";
- persons that elect to apply Section 1400Z-2 of the Code to gains recognized with respect to shares of our common stock;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment; and
- certain U.S. expatriates.

This discussion is for general information only and is not tax advice. Accordingly, all prospective non-U.S. holders of our common stock should consult their tax advisors with respect to the U.S. federal, state, local and non-U.S. tax consequences of the purchase, ownership and disposition of our common stock.

Distributions on Our Common Stock

As indicated in the "Dividend Policy" section of this prospectus, we have never declared or paid cash dividends on any of our capital stock and currently intend to retain all available funds and any future earnings to fund the development and growth of our business.

In the event that we do make distributions, subject to the discussions below under the sections titled "Backup Withholding and Information Reporting" and "Withholding and Information Reporting Requirements—FATCA", distributions paid on our common stock will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to such holder's tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in "Gain on Sale or Other Taxable Disposition of Our Common Stock."

Subject to the discussion in the following two paragraphs in this section, dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder's country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or successor form) to the applicable withholding agent and satisfy applicable certification and other requirements. Non-U.S. holders are urged to

consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty. A non-U.S. holder that is eligible for such lower rate of U.S. withholding tax as may be specified under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing a U.S. tax return with the IRS.

Gain on Sale or Other Taxable Disposition of Our Common Stock

Subject to the discussions below under "Backup Withholding and Information Reporting" and "Withholding and Information Reporting Requirements—FATCA," a non-U.S. holder generally will not be subject to any U.S. federal income or withholding tax on any gain realized upon such holder's sale or other taxable disposition of shares of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a U.S. trade or business and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed-base maintained by such non-U.S. holder in the United States, in which case the non-U.S. holder generally will be taxed on a net income basis at the graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in "Distributions on Our Common Stock" also may apply;
- the non-U.S. holder is a nonresident alien individual who is present in the United States for a period or periods aggregating 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence) on the net gain derived from the disposition, which may be offset by certain U.S. source capital losses of the non-U.S. holder, if any (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses; or
- we are, or have been, at any time during the five-year period preceding such sale or other taxable disposition (or the non-U.S. holder's holding period, if shorter) a "U.S. real property holding corporation," unless our common stock is regularly traded on an established securities market, as defined by applicable U.S. Treasury Regulations, and the non-U.S. holder holds no more than 5% of our outstanding common stock, directly or indirectly, actually or constructively, during the shorter of the 5-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. Generally, a corporation is a U.S. real property holding corporation only if the fair market value of its U.S. real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation, or that we are likely to become one in the future. No assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rules described above. Non-U.S. holders should consult their own tax advisors about the consequences that could result if we are, or become, a U.S. real property holding corporation.

Backup Withholding and Information Reporting

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our common stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders may have to comply with specific certification procedures to establish that the holder is not a United States person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our common stock. Dividends paid to non-U.S. holders subject to withholding of U.S. federal income tax, as described above in "Distributions on Our Common Stock," generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding will generally apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker.

Non-U.S. holders should consult their tax advisors regarding the application of the information reporting and backup withholding rules to them. Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder's U.S. federal income tax liability, if any, provided that an appropriate claim is filed with the IRS in a timely manner.

Withholding and Information Reporting Requirements—FATCA

Provisions of the Code commonly referred to as the Foreign Account Tax Compliance Act, or FATCA, generally impose a U.S. federal withholding tax at a rate of 30% on payments of dividends on our common stock paid to a foreign entity unless (i) if the foreign entity is a "foreign financial institution," such foreign entity undertakes certain due diligence, reporting, withholding and certification obligations, (ii) if the foreign entity is not a "foreign financial institution," such foreign entity identifies certain of its U.S. investors, if any or (iii) the foreign entity is otherwise exempt under FATCA. Such withholding may also apply to payments of gross proceeds of sales or other dispositions of our common stock, although under recently proposed U.S. Treasury Regulations (the preamble to which specifies that taxpayers are permitted to rely on such proposed U.S. Treasury Regulations pending finalization), no withholding will apply to such payments of gross proceeds. Under certain circumstances, a non-U.S. holder may be eligible for refunds or credits of this withholding tax. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this paragraph. Non-U.S. holders should consult their tax advisors regarding the possible implications of this legislation on their investment in our common stock and the entities through which they hold our common stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of the 30% withholding tax under FATCA.

UNDERWRITING (CONFLICTS OF INTEREST)

We and the underwriters for the offering named below, have entered into an underwriting agreement with respect to the common stock being offered. Subject to the terms and conditions of the underwriting agreement, each underwriter has severally agreed to purchase from us the number of shares of our common stock set forth opposite its name below. Cowen and Company, LLC, Evercore Group L.L.C. and Piper Sandler & Co. are the representatives of the underwriters.

Underwriter	Number of Shares
Cowen and Company, LLC	
Evercore Group L.L.C.	
Piper Sandler & Co.	
Wedbush Securities Inc.	
Blackstone Securities Partners L.P.	
Total	

The underwriting agreement provides that the obligations of the underwriters are subject to certain conditions precedent and that the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased, other than those shares covered by the overallotment option described below. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the underwriters against specified liabilities, including liabilities under the Securities Act of 1933, and to contribute to payments the underwriters may be required to make in respect thereof.

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel and other conditions specified in the underwriting agreement. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Overallotment Option to Purchase Additional Shares. We have granted to the underwriters an option to purchase up to additional shares of common stock at the public offering price, less the underwriting discount. This option is exercisable for a period of 30 days. The underwriters may exercise this option solely for the purpose of covering overallotments, if any, made in connection with the sale of common stock offered hereby. To the extent that the underwriters exercise this option, the underwriters will purchase additional shares from us in approximately the same proportion as shown in the table above.

Discounts and Commissions. The following table shows the public offering price, underwriting discount and commissions and proceeds, before expenses to us. These amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

We estimate that the total expenses of the offering, excluding underwriting discounts and commissions, will be approximately $ and are payable by us. We also have agreed to reimburse the underwriters for up to $ for their FINRA counsel fee. In accordance with FINRA Rule 5110, this reimbursed fee is deemed underwriting compensation for this offering.

	Per Share	Total Without Over-Allotment	Total With Over Allotment
Public offering price			
Underwriting discount			
Proceeds, before expenses, to Praxis Precision Medicines, Inc.			

The underwriters propose to offer the shares of common stock to the public at the public offering price set forth on the cover of this prospectus. The underwriters may offer the shares of common stock to securities dealers at the public offering price less a concession not in excess of $ per share. If all of the shares are not sold at the public offering price, the underwriters may change the offering price and other selling terms.

Discretionary Accounts. The underwriters do not intend to confirm sales of the shares to any accounts over which they have discretionary authority.

Market Information. Prior to this offering, there has been no public market for shares of our common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In addition to prevailing market conditions, the factors to be considered in these negotiations will include:

- the history of, and prospects for, our company and the industry in which we compete;
- our past and present financial information;
- an assessment of our management; its past and present operations, and the prospects for, and timing of, our future revenues;
- the present state of our development; and
- the above factors in relation to market values and various valuation measures of other companies engaged in activities similar to ours.

An active trading market for the shares may not develop. It is also possible that after the offering the shares will not trade in the public market at or above the initial public offering price.

We have applied for the quotation of our common stock on The Nasdaq Global Market under the symbol ‘‘PRAX’’.

Stabilization. In connection with this offering, the underwriters may engage in stabilizing transactions, overallotment transactions, syndicate covering transactions, penalty bids and purchases to cover positions created by short sales.

- Stabilizing transactions permit bids to purchase shares of common stock so long as the stabilizing bids do not exceed a specified maximum, and are engaged in for the purpose of preventing or retarding a decline in the market price of the common stock while the offering is in progress.
- Overallotment transactions involve sales by the underwriters of shares of common stock in excess of the number of shares the underwriters are obligated to purchase. This creates a syndicate short position which may be either a covered short position or a naked short position. In a covered short position, the number of shares over-allotted by the underwriters is not greater than the number of shares that they may purchase in the overallotment option. In a naked short position, the number of shares involved is greater than the number of shares in the overallotment option. The underwriters may close out any short position by exercising their overallotment option and/or purchasing shares in the open market.

- Syndicate covering transactions involve purchases of common stock in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of shares to close out the short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared with the price at which they may purchase shares through exercise of the overallotment option. If the underwriters sell more shares than could be covered by exercise of the overallotment option and, therefore, have a naked short position, the position can be closed out only by buying shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that after pricing there could be downward pressure on the price of the shares in the open market that could adversely affect investors who purchase in the offering.
- Penalty bids permit the representatives to reclaim a selling concession from a syndicate member when the common stock originally sold by that syndicate member is purchased in stabilizing or syndicate covering transactions to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock in the open market may be higher than it would otherwise be in the absence of these transactions. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on the Nasdaq Stock Market, in the over-the-counter market or otherwise and, if commenced, may be discontinued at any time.

Passive Market Making. In connection with this offering, underwriters and selling group members may engage in passive market making transactions in our common stock on the Nasdaq Stock Market in accordance with Rule 103 of Regulation M under the Securities Exchange Act of 1934, as amended, during a period before the commencement of offers or sales of common stock and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, such bid must then be lowered when specified purchase limits are exceeded.

Lock-Up Agreements. Pursuant to certain "lock-up" agreements, we and our executive officers, directors and our other stockholders, have agreed, subject to certain exceptions, not to offer, sell, assign, transfer, pledge, contract to sell, or otherwise dispose of or announce the intention to otherwise dispose of, or enter into any swap, hedge or similar agreement or arrangement that transfers, in whole or in part, the economic consequence of ownership of, directly or indirectly, or make any demand or request or exercise any right with respect to the registration of, or file with the SEC a registration statement under the Securities Act relating to, any common stock or securities convertible into or exchangeable or exercisable for any common stock without the prior written consent of Cowen and Company, LLC, Evercore Group L.L.C. and Piper Sandler & Co. for a period of 180 days after the date of the pricing of the offering.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition. The exceptions permit us, among other things and subject to restrictions, to: (a) issue common stock or options pursuant to employee benefit plans, (b) issue common stock upon exercise of outstanding options or warrants (c) issue securities in connection with acquisitions or similar transactions or (d) file registration statements on Form S-8. The exceptions permit parties to the "lock-up" agreements, among other things and subject to restrictions, to: (a) make certain gifts,

(b) if the party is a corporation, partnership, limited liability company or other business entity, make transfers to any shareholders, partners, members of or owners of similar equity interests in, the party, or to an affiliate of the party, if such transfer is not for value, (c) if the party is a corporation, partnership, limited liability company or other business entity, make transfers in connection with the sale or transfer of all of the party's capital stock, partnership interests, membership interests or other similar equity interests, as the case may be, or all or substantially all of the party's assets, in any such case not undertaken for the purpose of avoiding the restrictions imposed by the "lock-up" agreement and (d) participate in tenders involving the acquisition of 75% or more of our stock. In addition, the lock-up provision will not restrict broker-dealers from engaging in market making and similar activities conducted in the ordinary course of their business.

Cowen and Company, LLC, Evercore Group L.L.C. and Piper Sandler & Co., in their sole discretion, may release our common stock and other securities subject to the lock-up agreements described above in whole or in part at any time. In certain circumstances, the release of shares of common stock from the lock-up restrictions described above will trigger a pro rata release of shares of common stock held by certain other holders. When determining whether or not to release our common stock and other securities from lock-up agreements, Cowen and Company, LLC, Evercore Group L.L.C. and Piper Sandler & Co. will consider, among other factors, the holder's reasons for requesting the release, the number of shares for which the release is being requested and market conditions at the time of the request. In the event of such a release or waiver for one of our directors or officers, Cowen and Company, LLC, Evercore Group L.L.C. and Piper Sandler & Co. shall provide us with notice of the impending release or waiver at least three business days before the effective date of such release or waiver and we will announce the impending release or waiver by issuing a press release at least two business days before the effective date of the release or waiver.

Other Relationships. Certain of the underwriters and their affiliates have provided, and may in the future provide, various investment banking, commercial banking and other financial services for us and our affiliates for which they have received, and may in the future receive, customary fees.

Clarus Life Sciences III, L.P., or Clarus, an entity affiliated with Blackstone Securities Partners L.P., purchased (i) an aggregate of 7,375,799 shares of our Series A preferred stock between October 2016 to July 2017, including upon conversion of a series of convertible promissory notes previously issued, (ii) an aggregate of 5,052,852 shares of our Series B preferred stock from March 2018 to October 2018, including upon conversion of a series of convertible promissory notes previously issued, (iii) 1,410,477 shares of our Series B-1 preferred stock in June 2019 and (iv) 559,208 shares of our Series C preferred stock in November 2019. In addition, BSOF Parallel Master Fund L.P., or BSOF, an entity affiliated with Blackstone Securities Partners L.P. purchased 1,941,748 shares of our Series C preferred stock in April 2020. Clarus and BSOF, together the Blackstone Entities, have agreed, pursuant to Rule 5110(g) of the Financial Industry Regulatory Authority, Inc., or FINRA Rule 5110(g), that such shares of Series A preferred stock, Series B preferred stock, Series B-1 preferred stock and Series C preferred stock, or together the Preferred Stock, and the shares of our common stock to be issued to the Blackstone Entities upon conversion of the Preferred Stock in connection with this offering will not be sold during this offering, or sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put or call transaction that would result in the effective economic disposition of such shares of the Preferred Stock or common stock by any person for a period of 180 days immediately following the date of effectiveness of the registration statement of which this prospectus is a part or commencement of sales of common stock in this offering, except as permitted by FINRA Rule 5110(g)(2).

Conflicts of Interest. The Blackstone Entities, which beneficially own more than 10% of our outstanding preferred equity prior to the consummation of this offering, are affiliates of Blackstone Securities Partners L.P., an underwriter in this offering. As a result, Blackstone Securities Partners L.P. is deemed to have a "conflict of interest" within the meaning of FINRA Rule 5121. Accordingly, this

offering is being made in compliance with the applicable requirements of FINRA Rule 5121. A qualified independent underwriter is not necessary for this offering pursuant to FINRA Rule 5121(a)(1)(A). Pursuant to FINRA Rule 5121, Blackstone Securities Partners L.P. will not confirm any sales to any account over which it exercises discretionary authority without the specific prior written approval of the account holder.

Canada. The common stock may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the common stock must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Switzerland. The securities will not be offered, directly or indirectly, to the public in Switzerland and this prospectus does not constitute a public offering prospectus as that term is understood pursuant to article 652a or 1156 of the Swiss Federal Code of Obligations.

European Economic Area and the United Kingdom. In relation to each Member State of the European Economic Area and the United Kingdom (each, a "Member State"), no shares have been offered or will be offered pursuant to the offering to the public in that Member State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Member State or, where appropriate, approved in another Member State and notified to the competent authority in that Member State, all in accordance with the Prospectus Regulation, except that offers of shares may be made to the public in that Member State at any time under the following exemptions under the Prospectus Regulation:

A. to any legal entity which is a qualified investor as defined under the Prospectus Regulation;

B. to fewer than 150 natural or legal persons (other than qualified investors as defined under the Prospectus Regulation), subject to obtaining the prior consent of the underwriters; or

C. in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of shares shall require the Company or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation and each person who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with each of the underwriters and the Company that it is a "qualified investor" within the meaning of Article 2(e) of the Prospectus Regulation.

In the case of any shares being offered to a financial intermediary as that term is used in Prospectus Regulation, each such financial intermediary will be deemed to have represented,

acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Member State to qualified investors as so defined or in circumstances in which the prior consent of the underwriters have been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression an "offer to the public" in relation to shares in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression "Prospectus Regulation" means Regulation (EU) 2017/1129.

References to the Prospectus Regulation includes, in relation to the United Kingdom, the Prospectus Regulation as it forms part of the United Kingdom domestic law by virtue of the European Union (Withdrawal) Act of 2018.

United Kingdom. In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Regulation) (i) who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order and/or (iii) to whom it may otherwise be lawfully communicated (all such persons together being referred to as "relevant persons") in circumstances which have not resulted and will not result in an offer to the public of the shares in the United Kingdom within the meaning of the Financial Services and Markets Act 2000.

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons.

Hong Kong. The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (the "SFO") of Hong Kong and any rules made thereunder; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong) (the "CO"), or which do not constitute an offer to the public within the meaning of the CO. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made thereunder.

Singapore. Each underwriter has acknowledged that this prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each underwriter has represented and agreed that it has not offered or sold any shares or caused the shares to be made the subject of an invitation for subscription or purchase and will not offer or sell any shares or cause the shares to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this prospectus or any other document or material in connection with the

offer or sale, or invitation for subscription or purchase, of the shares, whether directly or indirectly, to any person in Singapore other than:

A. to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time (the "SFA")) pursuant to Section 274 of the SFA;

B. to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA; or

C. otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

A. a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

B. a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (however described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

(i) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(ii) where no consideration is or will be given for the transfer;

(iii) where the transfer is by operation of law;

(iv) as specified in Section 276(7) of the SFA; or

(v) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Singapore SFA Product Classification—In connection with Section 309B of the SFA and the CMP Regulations 2018, unless otherwise specified before an offer of shares, we have determined, and hereby notify all relevant persons (as defined in Section 309A(1) of the SFA), that the shares are "prescribed capital markets products" (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Israel. In the State of Israel this prospectus shall not be regarded as an offer to the public to purchase shares of common stock under the Israeli Securities Law, 5728 – 1968, which requires a prospectus to be published and authorized by the Israel Securities Authority, if it complies with certain provisions of Section 15 of the Israeli Securities Law, 5728 – 1968, including, inter alia, if: (i) the offer is

made, distributed or directed to not more than 35 investors, subject to certain conditions (the "Addressed Investors"); or (ii) the offer is made, distributed or directed to certain qualified investors defined in the First Addendum of the Israeli Securities Law, 5728 – 1968, subject to certain conditions (the "Qualified Investors"). The Qualified Investors shall not be taken into account in the count of the Addressed Investors and may be offered to purchase securities in addition to the 35 Addressed Investors. The company has not and will not take any action that would require it to publish a prospectus in accordance with and subject to the Israeli Securities Law, 5728 – 1968. We have not and will not distribute this prospectus or make, distribute or direct an offer to subscribe for our common stock to any person within the State of Israel, other than to Qualified Investors and up to 35 Addressed Investors.

Qualified Investors may have to submit written evidence that they meet the definitions set out in of the First Addendum to the Israeli Securities Law, 5728 – 1968. In particular, we may request, as a condition to be offered common stock, that Qualified Investors will each represent, warrant and certify to us and/or to anyone acting on our behalf: (i) that it is an investor falling within one of the categories listed in the First Addendum to the Israeli Securities Law, 5728 – 1968; (ii) which of the categories listed in the First Addendum to the Israeli Securities Law, 5728 – 1968 regarding Qualified Investors is applicable to it; (iii) that it will abide by all provisions set forth in the Israeli Securities Law, 5728 – 1968 and the regulations promulgated thereunder in connection with the offer to be issued common stock; (iv) that the shares of common stock that it will be issued are, subject to exemptions available under the Israeli Securities Law, 5728 – 1968: (a) for its own account; (b) for investment purposes only; and (c) not issued with a view to resale within the State of Israel, other than in accordance with the provisions of the Israeli Securities Law, 5728 – 1968; and (v) that it is willing to provide further evidence of its Qualified Investor status. Addressed Investors may have to submit written evidence in respect of their identity and may have to sign and submit a declaration containing, inter alia, the Addressed Investor's name, address and passport number or Israeli identification number.

We have not authorized and do not authorize the making of any offer of securities through any financial intermediary on our behalf, other than offers made by the underwriters and their respective affiliates, with a view to the final placement of the securities as contemplated in this document. Accordingly, no purchaser of the shares, other than the underwriters, is authorized to make any further offer of shares on our behalf or on behalf of the underwriters.

Electronic Offer, Sale and Distribution of Shares. A prospectus in electronic format may be made available on the websites maintained by one or more of the underwriters or selling group members, if any, participating in this offering and one or more of the underwriters participating in this offering may distribute prospectuses electronically. The representatives may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the underwriters and selling group members that will make internet distributions on the same basis as other allocations. Other than the prospectus in electronic format, the information on these websites is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved or endorsed by us or any underwriter in its capacity as underwriter, and should not be relied upon by investors.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts. Certain legal matters related to this offering will be passed upon for the underwriters by Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C., Boston, Massachusetts.

EXPERTS

The consolidated financial statements of Praxis Precision Medicines, Inc. at December 31, 2019 and 2018, and for each of the two years in the period ended December 31, 2019, appearing in this Prospectus and Registration Statement have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements) appearing elsewhere herein, and are included in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 (File Number) under the Securities Act with respect to the common stock we are offering by this prospectus. This prospectus does not contain all of the information included in the registration statement. For further information pertaining to us and our common stock, you should refer to the registration statement and to its exhibits. Whenever we make reference in this prospectus to any of our contracts, agreements or other documents, the references are not necessarily complete, and you should refer to the exhibits attached to the registration statement for copies of the actual contract, agreement or other document.

Upon the completion of the offering, we will be subject to the informational requirements of the Exchange Act and will file annual, quarterly and current reports, proxy statements and other information with the SEC. You can read our SEC filings, including the registration statement, at the SEC's website at www.sec.gov. We also maintain a website at www.praxismedicines.com. Upon completion of the offering, you may access, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendment to those reported filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC.

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Index to Consolidated Financial Statements as of and for the Years Ended December 31, 2018 and 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Praxis Precision Medicines, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Praxis Precision Medicines, Inc. (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive loss, redeemable convertible preferred stock and stockholders' (deficit) equity and cash flows for the years then ended and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles.

Adoption of ASU No. 2016-02

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for leases in 2019 due to the adoption of Accounting Standards Update (ASU) No. 2016-02 Leases (Topic 842), and the related amendments.

The Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has suffered recurring losses from operations, has limited financial resources, and has stated that substantial doubt exists about the Company's ability to continue as a going concern. Management's evaluation of the events and conditions and management's plans regarding these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty. Our opinion is not modified with respect to this matter.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2019.
Boston, Massachusetts
July 22, 2020

PRAXIS PRECISION MEDICINES, INC.

CONSOLIDATED BALANCE SHEETS

(Amounts in thousands, except share and per share data)

	December 31, 2018	December 31, 2019	Pro Forma December 31, 2019 (Unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 17,950	$ 44,815	$ 44,815
Prepaid expenses and other current assets	1,176	681	681
Total current assets	19,126	45,496	45,496
Property and equipment, net	103	128	128
Restricted cash	600	600	600
Operating lease right-of-use assets	–	1,450	1,450
Other non-current assets	–	20	20
Total assets	$ 19,829	$ 47,694	$ 47,694
Liabilities, redeemable convertible stock and stockholders' (deficit) equity			
Current liabilities:			
Accounts payable	$ 3,391	$ 2,667	$ 2,667
Accrued expenses	1,754	3,455	3,455
Operating lease liabilities	–	696	696
Total current liabilities	5,145	6,818	6,818
Long-term liabilities:			
Non-current portion of operating lease liabilities	–	763	763
Other long-term liabilities	2	–	–
Total liabilities	5,147	7,581	7,581
Commitments and contingencies (Note 8)			
Series A redeemable convertible preferred stock, $0.0001 par value; 8,075,799 shares authorized; 8,075,799 shares issued and outstanding as of December 31, 2018 and 2019; liquidation value as of December 31, 2018 and 2019 of $9,284 and $9,932, respectively; no shares authorized, issued or outstanding, pro forma as of December 31, 2019 (unaudited)	9,284	9,932	–
Series B redeemable convertible preferred stock, $0.0001 par value; 14,913,704 shares authorized; 14,913,704 shares issued and outstanding as of December 31, 2018 and 2019; liquidation value as of December 31, 2018 and 2019 of $46,381 and $49,969, respectively; no shares authorized, issued or outstanding, pro forma as of December 31, 2019 (unaudited)	46,436	49,969	–
Series B-1 redeemable convertible preferred stock, $0.0001 par value; 2,666,666 shares authorized; no shares issued or outstanding as of December 31, 2018, and 2,666,666 shares issued and outstanding as of December 31, 2019; liquidation value as of December 31, 2019 of $10,431; no shares authorized, issued or outstanding, pro forma as of December 31, 2019 (unaudited)	–	10,431	–
Series C redeemable convertible preferred stock, $0.0001 par value; 11,067,963 shares authorized; no shares issued or outstanding as of December 31, 2018, and 9,805,827 shares issued and outstanding as of December 31, 2019; liquidation value as of December 31, 2019 of $50,789; no shares authorized, issued or outstanding, pro forma as of December 31, 2019 (unaudited)	–	50,789	–
Stockholders' (deficit) equity:			
Common stock, $0.0001 par value; 46,000,000 shares authorized; 3,573,959 shares issued and 3,014,584 shares outstanding as of December 31, 2018, and 3,573,959 shares issued and 3,470,834 shares outstanding as of December 31, 2019; 39,035,955 shares issued and 38,932,830 shares outstanding, pro forma as of December 31, 2019 (unaudited)	1	1	4
Additional paid-in capital	326	–	121,118
Accumulated deficit	(41,365)	(81,009)	(81,009)
Total stockholders' (deficit) equity	(41,038)	(81,008)	40,113
Total liabilities, redeemable convertible preferred stock and stockholders' (deficit) equity	$ 19,829	$ 47,694	$ 47,694

The accompanying notes are an integral part of these consolidated financial statements.

PRAXIS PRECISION MEDICINES, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(Amounts in thousands, except share and per share data)

	Year Ended December 31,	
	2018	2019
Operating expenses:		
Research and development	$ 18,820	$ 29,557
General and administrative	3,899	6,232
Total operating expenses	22,719	35,789
Loss from operations	(22,719)	(35,789)
Total other income (expense):		
Interest income	92	193
Interest expense	(127)	–
Other expense	(3,648)	–
Total other income (expense), net	(3,683)	193
Loss before provision for (benefit from) income taxes	(26,402)	(35,596)
Provision for (benefit from) income taxes	133	(84)
Net loss and comprehensive loss	$ (26,535)	$ (35,512)
Accretion and cumulative dividends on redeemable convertible preferred stock	(2,296)	(5,170)
Loss on conversion of convertible notes	(392)	–
Net loss attributable to common stockholders	$ (29,223)	$ (40,682)
Net loss per share attributable to common stockholders, basic and diluted	$ (10.52)	$ (12.43)
Weighted average common shares outstanding, basic and diluted	2,776,947	3,273,420
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)		$ (1.25)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)		28,398,898

The accompanying notes are an integral part of these consolidated financial statements.

PRAXIS PRECISION MEDICINES, INC.

CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' (DEFICIT) EQUITY

(Amounts in thousands, except share data)

	Series A Redeemable Convertible Preferred Stock		Series B Redeemable Convertible Preferred Stock		Series B-1 Redeemable Convertible Preferred Stock		Series C Redeemable Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' (Deficit) Equity
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount			
Balance at December 31, 2017	8,075,799	$ 9,031	–	$ –	–	$ –	–	$ –	2,513,542	$ 1	$ –	$ (14,438)	$ (14,437)
Conversion of convertible notes to Series B redeemable convertible preferred stock	–	–	1,286,185	3,074	–	–	–	–	–	–	–	(392)	(392)
Issuance of Series B redeemable convertible preferred stock, net of issuance costs of $197	–	–	13,627,519	43,362	–	–	–	–	–	–	–	–	–
Stock-based compensation expense	–	–	–	–	–	–	–	–	–	–	579	–	579
Accretion of redeemable convertible preferred stock to redemption value	–	253	–	–	–	–	–	–	–	–	(253)	–	(253)
Vesting of restricted stock awards	–	–	–	–	–	–	–	–	501,042	–	–	–	–
Net loss	–	–	–	–	–	–	–	–	–	–	–	(26,535)	(26,535)
Balance at December 31, 2018	8,075,799	$ 9,284	14,913,704	$ 46,436	–	$ –	–	$ –	3,014,584	$ 1	$ 326	$ (41,365)	$ (41,038)
Issuance of Series B-1 redeemable convertible preferred stock, net of issuance costs of $61	–	–	–	–	2,666,666	9,939	–	–	–	–	–	–	–
Issuance of Series C redeemable convertible preferred stock, net of issuance costs of $165	–	–	–	–	–	–	9,805,827	50,336	–	–	–	–	–
Stock-based compensation expense	–	–	–	–	–	–	–	–	–	–	668	–	668
Accretion of redeemable convertible preferred stock to redemption value	–	648	–	3,533	–	492	–	453	–	–	(994)	(4,132)	(5,126)
Vesting of restricted stock awards	–	–	–	–	–	–	–	–	456,250	–	–	–	–
Net loss	–	–	–	–	–	–	–	–	–	–	–	(35,512)	(35,512)
Balance at December 31, 2019	8,075,799	$9,932	14,913,704	$49,969	2,666,666	$10,431	9,805,827	$50,789	3,470,834	$ 1	$ –	$ (81,009)	$ (81,008)
Conversion of redeemable convertible preferred stock into common stock	(8,075,799)	(9,932)	(14,913,704)	(49,969)	(2,666,666)	(10,431)	(9,805,827)	(50,789)	35,461,996	3	121,118	–	121,121
Pro forma balance at December 31, 2019	–	$ –	–	$ –	–	$ –	–	$ –	38,932,830	$ 4	$ 121,118	$ (81,009)	$ 40,113

The accompanying notes are an integral part of these consolidated financial statements.

PRAXIS PRECISION MEDICINES, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(Amounts in thousands)

	Year Ended December 31,	
	2018	2019
Cash flows from operating activities:		
Net loss	$ (26,535)	$ (35,512)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation expense	1	37
Stock-based compensation expense	579	668
Change in fair value of financial instruments	3,648	–
Non-cash operating lease expense	–	642
Non-cash interest expense	127	–
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(867)	495
Accounts payable	1,667	(837)
Accrued expenses	659	1,742
Operating lease liabilities	–	(633)
Other	–	(22)
Net cash used in operating activities	(20,721)	(33,420)
Cash flows from investing activities:		
Purchases of property and equipment	(63)	(103)
Net cash used in investing activities	(63)	(103)
Cash flows from financing activities:		
Proceeds from issuance of convertible note	1,000	–
Proceeds from issuance of convertible preferred stock, net of issuance costs	36,804	60,388
Net cash provided by financing activities	37,804	60,388
Increase in cash, cash equivalents and restricted cash	17,020	26,865
Cash, cash equivalents and restricted cash, beginning of period	1,530	18,550
Cash, cash equivalents and restricted cash, end of period	$ 18,550	$ 45,415
Supplemental disclosures of non-cash investing and financing activities:		
Issuance of Series B redeemable convertible preferred stock upon settlement of convertible notes	$ 3,074	$ –
Settlement of derivative liabilities upon issuance of Series B redeemable convertible preferred stock	$ 5,406	$ –
Issuance of Series B redeemable convertible preferred stock to acquire Purdue license	$ 3,738	$ –
Accretion of redeemable convertible preferred stock to redemption value	$ 253	$ 5,126
Operating lease liabilities recorded upon adoption of ASC 842	$ –	$ 2,092
Interest expense converted into Series B redeemable convertible preferred stock	$ 127	$ –
Purchases of property and equipment included in accrued expenses	$ 41	$ –
Redeemable convertible preferred stock issuance costs included in accounts payable	$ –	$ 113

The accompanying notes are an integral part of these consolidated financial statements.

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of the Business

Praxis Precision Medicines, Inc. ("Praxis" or the "Company") is a clinical-stage biopharmaceutical company translating genetic insights into the development of therapies for central nervous system ("CNS") disorders characterized by neuronal imbalance. The Company has established a broad portfolio, including five disclosed programs across multiple CNS disorders, including depression, epilepsy, movement disorders and pain syndromes, with three clinical-stage product candidates. The Company's most advanced programs, PRAX-114 and PRAX-944, are currently in Phase 2 development. PRAX-114 is being developed for the treatment of major depressive disorder and perimenopausal depression, and PRAX-944 is a selective small molecule inhibitor of T-type calcium channels for the treatment of Essential Tremor.

Praxis was incorporated in 2015. The Company has funded its operations primarily with proceeds from the issuance of convertible debt, Series A redeemable convertible preferred stock (the "Series A Preferred Stock"), Series B redeemable convertible preferred stock (the "Series B Preferred Stock"), Series B-1 redeemable convertible preferred stock (the "Series B-1 Preferred Stock") and Series C redeemable convertible preferred stock (the "Series C Preferred Stock") (the Series A Preferred Stock, Series B Preferred Stock, Series B-1 Preferred Stock and Series C Preferred Stock are collectively referred to as the "Preferred Stock"). From inception through December 31, 2019, the Company raised $107.1 million in aggregate cash proceeds from these transactions, net of issuance costs. On February 19, 2020 and March 3, 2020, the Company repurchased shares of the Series C Preferred Stock for an aggregate cash repurchase price of $30.0 million. On April 15, 2020 and May 8, 2020, the Company sold and issued additional shares of the Series C Preferred Stock for aggregate cash proceeds of $23.5 million.

The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry, including but not limited to, risks associated with completing preclinical studies and clinical trials, receiving regulatory approvals for product candidates, development by competitors of new biopharmaceutical products, dependence on key personnel, protection of proprietary technology, compliance with government regulations and the ability to secure additional capital to fund operations. Programs currently under development will require significant additional research and development efforts, including preclinical and clinical testing and regulatory approval, prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure and extensive compliance-reporting capabilities. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will realize revenue from product sales.

Going Concern

In accordance with the Financial Accounting Standards Board Accounting Standards Update 2014-15, *Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern (Subtopic 205-40)*, the Company has evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern within one year after the date that the consolidated financial statements are issued.

The Company has incurred recurring losses since its inception, including net losses of $26.5 million and $35.5 million for the years ended December 31, 2018 and 2019, respectively. In addition, as of December 31, 2019, the Company had an accumulated deficit of $81.0 million. The Company expects to continue to generate operating losses for the foreseeable future. The future viability of the Company is dependent on its ability to raise additional capital to finance its operations.

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Continued)

The Company's inability to raise capital as and when needed could have a negative impact on its financial condition and ability to pursue its business strategies. There can be no assurance that the current operating plan will be achieved or that additional funding will be available on terms acceptable to the Company, or at all.

The Company expects that its cash and cash equivalents as of December 31, 2019 of $44.8 million, together with the $23.5 million aggregate cash proceeds from the sale and issuance of additional shares of the Series C Preferred Stock on April 15, 2020 and May 8, 2020, offset by the repurchase of shares of the Series C Preferred Stock for an aggregate cash repurchase price of $30.0 million on February 19, 2020 and March 3, 2020, will not be sufficient to fund the operating expenses and capital expenditure requirements necessary to advance its research efforts and clinical trials for at least the next twelve months from the date of issuance of these consolidated financial statements, and the Company will need to obtain additional funding. The future viability of the Company beyond one year from the date of issuance of these consolidated financial statements is dependent on its ability to raise additional capital to finance its operations. If the Company is unable to obtain additional funding, the Company could be forced to delay, reduce or eliminate some or all of its research and development programs, product portfolio expansion, or commercialization efforts, which could adversely affect its business prospects, or the Company may be unable to continue operations. The Company expects to seek additional funding through private or public equity transactions, debt financings, or other capital sources, including collaborations with other companies or other strategic transactions.

Although management plans to pursue additional funding, there is no assurance that the Company will be successful in obtaining sufficient funding on terms acceptable to the Company to fund continuing operations, if at all.

Based on its recurring losses and negative cash flows from operations since inception, expectation of continuing operating losses and negative cash flows from operations for the foreseeable future, and the need to raise additional capital to finance its future operations, management concluded that there is substantial doubt about the Company's ability to continue as a going concern for one year after the date that these consolidated financial statements are issued.

The accompanying consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty. Accordingly, the consolidated financial statements have been prepared on a basis that assumes the Company will continue as a going concern and which contemplates the realization of assets and satisfaction of liabilities and commitments in the ordinary course of business.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States of America ("GAAP"). Any reference in these notes to applicable guidance is meant to refer to the authoritative GAAP as found in the Accounting Standards Codification ("ASC") and Accounting Standards Updates ("ASU") of the Financial Accounting Standards Board ("FASB").

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Continued)

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries, Praxis Security Corporation and Praxis Precision Medicines Australia Pty Ltd. All intercompany transactions have been eliminated in consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of expenses during the reporting periods. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, the accrual for research and development expenses, stock-based compensation expense, the valuation of equity and derivative instruments and the recoverability of the Company's net deferred tax assets and related valuation allowance. Estimates are periodically reviewed in light of changes in circumstances, facts and experience. Changes in estimates are recorded in the period in which they become known. Actual results could differ materially from those estimates.

Unaudited Pro Forma Information

Upon the closing of a qualified public offering (as defined in the Company's Amended and Restated Certificate of Incorporation), all of the Company's outstanding shares of redeemable convertible preferred stock will automatically convert into shares of common stock. The accompanying unaudited pro forma consolidated balance sheet and consolidated statement of redeemable convertible preferred stock and stockholders' (deficit) equity as of December 31, 2019 have been prepared as if the Company's proposed initial public offering ("IPO") had occurred on December 31, 2019 to give effect to the automatic conversion of all outstanding shares of redeemable convertible preferred stock into an aggregate of 35,461,996 shares of common stock upon the consummation of the proposed IPO. The shares of common stock expected to be issued and the proceeds expected to be received in the proposed IPO are excluded from such pro forma financial information.

The unaudited pro forma basic and diluted net loss per share attributable to common stockholders in the accompanying consolidated statement of operations and comprehensive loss for the year ended December 31, 2019 was computed using the weighted average number of shares of common stock outstanding, including the pro forma effect of the automatic conversion of all outstanding shares of redeemable convertible preferred stock into shares of common stock as if the Company's proposed IPO had occurred on the later of: (i) January 1, 2019 or (ii) the date the equity instruments were issued. Accordingly, the unaudited pro forma net loss attributable to common stockholders used in the calculation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended December 31, 2019: (i) excludes the effects of cumulative dividends accrued for redeemable convertible preferred stock from the net loss attributable to common stockholders and (ii) excludes the effects of other accretion recorded for redeemable convertible preferred stock from the net loss attributable to common stockholders. The unaudited pro forma basic and diluted net loss per share attributable to common stockholders does not include the shares expected to be sold or related proceeds to be received in the proposed IPO.

Segments

The Company has one operating segment. The Company's chief operating decision maker, its Chief Executive Officer, manages the Company's operations on a consolidated basis for the purposes

of assessing performance and allocating resources. The majority of the Company's long-lived assets are held in the United States.

Cash, Cash Equivalents and Restricted Cash

The Company considers all highly liquid investments purchased with original maturities of 90 days or less at acquisition to be cash equivalents. Cash and cash equivalents include cash held in banks and amounts held in interest-bearing money market funds. Cash equivalents are carried at cost, which approximates their fair market value.

Restricted cash comprises a letter of credit for the benefit of the landlord in connection with the Company's lease facility. Restricted cash is classified as either current or non-current based on the terms of the underlying lease arrangement.

The following table presents cash, cash equivalents and restricted cash as reported on the consolidated balance sheets that equal the total amounts on the consolidated statements of cash flows (in thousands):

	December 31,	
	2018	2019
Cash and cash equivalents	$17,950	$44,815
Restricted cash	600	600
Total cash, cash equivalents and restricted cash as shown on the consolidated statement of cash flows	$18,550	$45,415

Concentrations of Credit Risk and Significant Suppliers and License Agreements

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash, cash equivalents and restricted cash. The Company maintains deposits in accredited financial institutions in excess of federally insured limits. Bank accounts in the United States are insured by the Federal Deposit Insurance Corporation (the "FDIC") up to $250,000. As of December 31, 2018 and 2019, the Company's primary operating accounts significantly exceeded the FDIC limits. The Company deposits its cash in financial institutions that it believes have high credit quality, and has not experienced any losses on such accounts and does not believe it is exposed to any unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company is dependent on third-party manufacturers to supply materials for research and development activities of its programs, including preclinical and clinical testing. In particular, the Company relies, and expects to continue to rely, on a small number of third-party manufacturers to produce and process its current and potential product candidates and to manufacture supply of its current and potential product candidates for preclinical and clinical activities. These programs could be adversely affected by a significant interruption in the supply of the necessary materials. The Company is also dependent on third parties who provide license rights used in the development of certain programs. The Company could experience delays in the development of its programs if any of these license agreements are terminated, if the Company fails to meet the obligations required under its arrangements, or if the Company is unable to successfully secure new strategic alliances or licensing agreements.

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Continued)

Off-Balance Sheet Risk

As of December 31, 2018 and 2019, the Company had no off-balance sheet risk such as foreign exchange contracts, option contracts, or other hedging arrangements.

Fair Value Measurements

Certain assets and liabilities of the Company are carried at fair value under GAAP. The fair values of the Company's financial assets and liabilities reflects the Company's estimate of the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3—Unobservable inputs that are supported by little or no market activity that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

To the extent the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

An entity may choose to measure many financial instruments and certain other items at fair value at specified election dates. Subsequent unrealized gains and losses on items for which the fair value option has been elected will be reported in earnings.

The carrying amounts reflected in the consolidated balance sheets for cash, prepaid expenses and other current assets, accounts payable and accrued expenses approximate their fair values due to the short-term nature of these assets and liabilities.

Property and Equipment

Property and equipment are recorded at cost. Depreciation is calculated using the straight-line method over the following estimated useful lives of the assets:

	Estimated Useful Life
Office furniture and equipment	5 years
Laboratory equipment	3 years
Computer equipment	3 years

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Continued)

Upon disposal, retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in the results of operations. Expenditures for repairs and maintenance that do not improve or extend the lives of the respective assets are charged to expense as incurred.

Impairment of Long-Lived Assets

Long-lived assets consist of property and equipment. Long-lived assets to be held and used are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset group for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset group to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset group are less than its carrying amount. The impairment loss would be based on the excess of the carrying value of the impaired asset group over its fair value, determined based on discounted cash flows. The Company did not record any impairment losses on long-lived assets in either year ended December 31, 2018 or 2019.

Leases

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. This standard established a right-of-use model that requires all lessees to recognize right-of-use assets and lease liabilities on their balance sheet that arise from leases as well as provide disclosures with respect to certain qualitative and quantitative information related to a company's leasing arrangements to meet the objective of allowing users of financial statements to assess the amount, timing and uncertainty of cash flows arising from leases. The FASB subsequently issued the following amendments to ASU 2016-02 that have the same effective date and transition date: ASU No. 2018-01, *Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842*, ASU No. 2018-10, *Codification Improvements to Topic 842, Leases*, ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*, ASU No. 2018-20, *Narrow-Scope Improvement for Lessors*, and ASU No. 2019-01, *Leases (Topic 842): Codification Improvements*. The Company adopted these amendments with ASU 2016-02 (collectively, the "new leasing standards"), effective January 1, 2019.

The Company adopted the new leasing standards using the modified retrospective transition approach, with no restatement of prior periods and there was no cumulative adjustment to retained earnings. Upon adoption, the Company elected the package of transition practical expedients, which allowed the Company to not reassess the following: (i) whether any expired or existing contracts are or contain leases, (ii) the lease classification for any expired or existing leases and (iii) the treatment of initial direct costs for existing leases. The Company made an accounting policy election to not recognize short-term leases with an initial term of twelve months or less within its consolidated balance sheets and to recognize those lease payments on a straight-line basis in its consolidated statements of operations over the lease term. Upon adopting the new leasing standards, the Company recognized an operating lease right-of-use asset of $2.1 million and a corresponding operating lease liability of $2.1 million, which are included in its consolidated balance sheets. The adoption of the new leasing standards did not have a material impact on the Company's consolidated statements of operations.

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The Company determines if an arrangement is a lease at contract inception. Operating lease right-of-use assets represent the Company's right to use an underlying asset for the lease term and operating lease liabilities represent its obligation to make lease payments arising from the lease. Operating right-of-use assets and liabilities are recognized at the commencement date of the lease based upon the present value of lease payments over the lease term. When determining the lease term, the Company includes options to extend or terminate the lease when it is reasonably certain that the option will be exercised.

The Company uses the implicit rate when readily determinable and uses its incremental borrowing rate when the implicit rate is not readily determinable, based upon the information available at the commencement date in determining the present value of the lease payments. The incremental borrowing rate is determined using a secured borrowing rate for the same currency and term as the associated lease.

The lease payments used to determine operating lease right-of-use assets may include lease incentives and stated rent increases. The Company's lease agreements may include both lease and non-lease components, which the Company accounts for as a single lease component when the payments are fixed, for all classes of underlying assets. Variable payments included in the lease agreement are expensed as incurred.

The Company's operating leases are reflected in operating lease right-of-use assets and in current operating lease liabilities and long-term operating lease liabilities in its consolidated balance sheets. The Company's operating lease right-of-use asset as of December 31, 2019 did not include any lease incentives. Lease expense for future lease payments is recognized on a straight-line basis over the lease term.

Prior to the adoption of the new leasing standards, the Company recognized lease costs on a straight-line basis once it gained control of the space, without regard to deferred payment terms, such as rent holidays, that would defer the commencement date of required payments or escalating payment amounts. Any lease incentives received were treated as a reduction of costs over the term of the lease agreement, as they were considered an inseparable part of the lease agreement. The difference between required lease payments and rent expense was recorded as deferred rent, which was included in other non-current liabilities in the December 31, 2018 consolidated balance sheet.

Redeemable Convertible Preferred Stock

The Company records all redeemable convertible preferred stock upon issuance at its respective fair value or original issuance price, less issuance costs and any associated discounts. The Company classifies its redeemable convertible preferred stock outside of stockholders' (deficit) equity as the redemption of such shares is outside the Company's control. The Company adjusts the carrying values of the redeemable convertible preferred stock to redemption value when the redemption value exceeds the carrying value.

Research and Development Costs

Research and development costs are expensed as incurred. Research and development expenses consist of costs incurred in performing research and development activities, including salaries, stock-based compensation and benefits, facilities costs, depreciation, third-party license fees, and external

costs of outside vendors engaged to conduct preclinical development activities and clinical trials as well as to manufacture research and development materials. Non-refundable prepayments for goods or services that will be used or rendered for future research and development activities are deferred and capitalized. Such amounts are recognized as an expense as the goods are delivered or the related services are performed or until it is no longer expected that the goods will be delivered or the services rendered. Costs incurred to obtain licenses are recognized as research and development expense as incurred if the technology licensed has no alternative future uses.

The Company has entered into various research and development related contracts with parties both inside and outside of the United States. These agreements are cancelable, and related payments are recorded as research and development expenses as incurred. The Company records accrued liabilities for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies or clinical trials, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates. The Company's historical accrual estimates have not been materially different from the actual costs.

Patent-Related Costs

Patent-related costs incurred in connection with patent applications are expensed as incurred due to the uncertainty about the recovery of the expenditure. Amounts incurred are classified as general and administrative expenses in the accompanying consolidated statement of operations and comprehensive loss.

Stock-Based Compensation

The Company accounts for all stock-based awards granted to employees and non-employees as stock-based compensation expense at fair value in accordance with FASB ASC Topic 718, *Compensation—Stock Compensation* ("ASC 718"). For stock-based awards issued to employees, non-employees and members of the Company's board of directors (the "Board") for their services on the Board, the Company measures the estimated fair value of the stock-based award on the date of the grant. The Company recognizes compensation expense for those awards granted to employees and members of the Board over the requisite service period, which is generally the vesting period of the respective award. For non-employee awards, compensation expense is recognized as the services are provided, which is generally ratably over the vesting period. The Company determines the fair value of restricted stock awards in reference to the fair value of its common stock less any applicable purchase price. The Company issues stock-based awards with service-based vesting conditions and records the expense for these awards on a straight-line basis over the vesting period. To date, the Company has not issued any stock-based awards with performance or market-based vesting conditions. The Company accounts for forfeitures as they occur.

The Company classifies stock-based compensation expense in its consolidated statement of operations and comprehensive loss in the same manner in which the award recipient's salary or service payments are classified.

Given the absence of an active market for the Company's common stock, the fair value of shares of common stock underlying the Company's stock-based awards is determined on each grant date.

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The Company determines the estimated fair value of its equity instruments based on a number of objective and subjective factors, including external market conditions affecting the biotechnology industry sector. The Company utilizes various valuation methodologies in accordance with the framework of the American Institute of Certified Public Accountants' Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, to estimate the fair value of its common stock. Each valuation methodology includes estimates and assumptions that require the Company's judgment. These estimates and assumptions include a number of objective and subjective factors in determining the value of the Company's common stock at each grant date, such as the following: (i) prices paid for the Company's redeemable convertible preferred stock, and the rights, preferences, and privileges of the Company's redeemable convertible preferred stock and common stock; (ii) the Company's stage of development; (iii) the fact that the grants of stock-based awards related to illiquid securities in a private company; and (iv) the likelihood of achieving a liquidity event for the common stock underlying the stock-based awards, such as an IPO or sale of the Company, given prevailing market conditions. The methodology utilized to estimate the fair value of the Company's common stock was the option-pricing method ("OPM") to back-solve the estimated value of the Company's equity and corresponding value of the Company's common stock.

The fair value of each stock option award is estimated on the date of grant using the Black-Scholes option pricing model, which requires inputs of subjective assumptions, including: (i) the expected volatility of the Company's stock; (ii) the expected term of the award; (iii) the risk-free interest rate; (iv) expected dividends; and (v) the fair value of common stock. Due to the lack of Company-specific historical and implied volatility data, the Company determines the volatility for awards granted based on an analysis of reported data for a group of guideline publicly-traded companies that issued options with substantially similar terms. For this analysis, the Company selects companies with comparable characteristics including enterprise value, risk profiles, and with historical share price information sufficient to meet the expected life of the stock-based awards. The Company determines expected volatility using a weighted average of the historical volatilities of the guideline group of companies. The Company expects to continue to apply this process until such time as it has adequate historical data regarding the volatility of its own traded stock price. As permitted under ASC 718, the Company has elected to use the contractual term as the expected term for certain non-employee awards, on an award-by-award basis. For all other awards, the expected term of the Company's stock options has been determined utilizing the "simplified" method whereby the expected term equals the average of the vesting term and the original contractual term of the option, on a weighted basis based on the vesting of each tranche. The Company utilizes this method as it has insufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for instruments with a term commensurate with the expected term assumption. The expected dividend yield is assumed to be zero as the Company has never paid dividends, and does not have current plans to pay any dividends on its common stock.

Foreign Currency

The functional currency of the Company's wholly owned foreign subsidiary in Australia is the U.S. dollar. Monetary assets and liabilities resulting from transactions denominated in currencies other than the functional currency are remeasured into the functional currency at exchange rates prevailing at the balance sheet date. Non-monetary assets and liabilities denominated in foreign currencies are measured using historical exchange rates prevailing at the date of the transaction and are not subsequently remeasured. Exchange gains or losses arising from foreign currency transactions are

included in the determination of net loss. The Company recorded a foreign currency loss of $0.3 million for the year ended December 31, 2018, which is included in research and development expense in the consolidated statement of operations and comprehensive loss. There were no material foreign currency gains or losses for the year ended December 31, 2019.

Income Taxes

Deferred tax assets and liabilities are determined on the basis of the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Changes in deferred tax assets and liabilities are recorded in the provision for income taxes. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes, based upon the weight of available evidence, that it is more likely than not that all or a portion of the deferred tax assets will not be realized, a valuation allowance is established.

The Company accounts for uncertain tax positions recognized in the consolidated financial statements by prescribing a more-likely-than-not threshold for financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The provision for income taxes includes the effects of any resulting tax reserves, or unrecognized tax benefits, that are considered appropriate as well as the related net interest and penalties.

Comprehensive Loss

Comprehensive loss includes net loss and certain changes in stockholders' deficit that are excluded from net loss. The Company's comprehensive loss was equal to net loss for the years ended December 31, 2018 and 2019.

Net Loss per Share

The Company follows the two-class method to compute net loss per share attributable to common stockholders as the Company has issued shares that meet the definition of participating securities. The two-class method determines net income (loss) per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income (losses) for the period to be allocated between common and participating securities based upon their respective rights to share in the earnings as if all income (losses) for the period had been distributed. During periods of loss, there is no allocation required under the two-class method since the participating securities do not have a contractual obligation to fund the losses of the Company.

Net loss attributable to common stockholders is equal to the net loss for the period, as adjusted for: (i) cumulative dividends accrued for redeemable convertible preferred stock, whether or not declared, (ii) increases in carrying value recorded for redeemable convertible preferred stock, including accretion on redeemable convertible preferred stock to redemption value for amounts other than cumulative dividends and (iii) losses resulting from conversions of convertible notes recorded as capital transactions.

Basic net loss per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted average number of common shares outstanding for the period, which excludes shares of restricted common stock that are not vested. Diluted net loss

per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted average number of common shares outstanding for the period, after giving consideration to the dilutive effect of potentially dilutive common shares. For purpose of this calculation, outstanding options to purchase shares of common stock, unvested shares of restricted common stock and shares of redeemable convertible preferred stock are considered potentially dilutive common shares. The Company has generated a net loss in all periods presented so the basic and diluted net loss per share attributable to common stockholders are the same as the inclusion of the potentially dilutive securities would be anti-dilutive.

Subsequent Events

The Company considers events or transactions that occur after the balance sheet date but prior to the issuance of the consolidated financial statements to provide additional evidence for certain estimates or to identify matters that require additional disclosure. Subsequent events have been evaluated as required through July 22, 2020, the date these consolidated financial statements were issued.

Emerging Growth Company Status

The Company is an “emerging growth company” (“EGC”), as defined in the Jumpstart Our Business Startups Act (“JOBS Act”), and may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not EGCs. The Company may take advantage of these exemptions until it is no longer an EGC under Section 107 of the JOBS Act, which provides that an EGC can take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards. The Company has elected to avail itself of the extended transition period and, therefore, while the Company is an EGC it will not be subject to new or revised accounting standards the same time that they become applicable to other public companies that are not EGCs, unless it chooses to early adopt a new or revised accounting standard.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In January 2016, the FASB issued ASU No. 2016-01, *Financial Instruments—Overall (Subtopic 825-10)—Recognition and Measurement of Financial Assets and Financial Liabilities*, which has been subsequently amended by ASU No. 2018-03, ASU No. 2019-04, ASU No. 2020-01 and ASU No. 2020-03 (“ASU 2016-01”). The provisions of ASU 2016-01 make targeted improvements to enhance the reporting model for financial instruments to provide users of financial statements with more decision-useful information, including certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. The Company early adopted ASU 2016-01 effective January 1, 2019. The implementation of this standard had no impact on the Company’s financial position or results of operations.

In February 2016, the FASB issued the new leasing standards to increase transparency and comparability among organizations related to their leasing activities. The Company early adopted the new leasing standards effective January 1, 2019. For additional information on the adoption of the new leasing standards, please read the Company’s policy above entitled *Leases*, and Note 8, *Commitments and Contingencies*, to these consolidated financial statements.

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In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"), to address diversity in practice in how certain cash receipts and cash payments are presented and classified in the consolidated statement of cash flows. The Company early adopted ASU 2016-15 effective January 1, 2018. The adoption of ASU 2016-15 had no impact on the Company's financial position or results of operations.

In January 2017, the FASB issued ASU No. 2017-01, *Business Combinations (Topic 805): Clarifying the Definition of a Business* ("ASU 2017-01"). The standard clarifies the framework for determining whether an integrated set of assets and activities meets the definition of a business. The revised framework establishes a screen for determining whether an integrated set of assets and activities is a business and narrows the definition of a business. The screen requires that when substantially all of the fair value of the gross assets acquired (or disposed of) is concentrated in a single identifiable asset or a group of similar identifiable assets, the set is not a business. This screen reduces the number of transactions that need to be further evaluated. The Company early adopted ASU 2017-01 effective January 1, 2018. The adoption of this standard did not have a material impact on the Company's financial position or results of operations.

In May 2017, the FASB issued ASU No. 2017-09, *Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting* ("ASU 2017-09"), which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The standard is effective for annual periods beginning after December 15, 2017. The Company adopted ASU 2017-09 effective January 1, 2018. The adoption of ASU 2017-09 had no impact on the Company's financial position or results of operations.

In July 2017, the FASB issued ASU No. 2017-11, *Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480), Derivatives and Hedging (Topic 815) I. Accounting for Certain Financial Instruments with Down Round Features II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception* ("ASU 2017-11"). Part I applies to entities that issue financial instruments such as warrants, convertible debt or convertible preferred stock that contain down-round features. Part II replaces the indefinite deferral for certain mandatorily redeemable noncontrolling interests and mandatorily redeemable financial instruments of nonpublic entities contained within ASC Topic 480 with a scope exception and does not impact the accounting for these mandatorily redeemable instruments. The Company early adopted ASU 2017-11 effective January 1, 2019. The adoption of ASU 2017-11 had no impact on the Company's financial position or results of operations.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"). The standard eliminates, adds and modifies certain disclosure requirements for fair value measurements. The Company early adopted ASU 2018-13 as of January 1, 2018. The adoption of this standard did not have a material impact on the Company's financial position or results of operations.

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Recently Issued Accounting Pronouncements

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326)—Measurement of Credit Losses on Financial Instruments,* which has been subsequently amended by ASU No. 2018-19, ASU No. 2019-04, ASU No. 2019-05, ASU No. 2019-10, ASU No. 2019-11 and ASU No. 2020-03 ("ASU 2016-13"). The provisions of ASU 2016-13 modify the impairment model to utilize an expected loss methodology in place of the currently used incurred loss methodology and require a consideration of a broader range of reasonable and supportable information to inform credit loss estimates. ASU 2016-13 is effective for the Company on January 1, 2023, with early adoption permitted. The Company is currently evaluating the potential impact that this standard may have on its financial position and results of operations, as well as the timing of its adoption of this standard.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740)—Simplifying the Accounting for Income Taxes* ("ASU 2019-12"), as part of its initiative to reduce complexity in the accounting standards. The amendments in ASU 2019-12 eliminate certain exceptions related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences. ASU 2019-12 also clarifies and simplifies other aspects of the accounting for income taxes. ASU 2019-12 is effective for the Company on January 1, 2022, with early adoption permitted. The Company is currently evaluating the potential impact that this standard may have on its financial position and results of operations, as well as the timing of its adoption of this standard.

3. Restricted Cash

As of December 31, 2018 and 2019, the Company had restricted cash of $0.6 million, held as a letter of credit for the benefit of the landlord in connection with the Company's lease in Cambridge, Massachusetts. Restricted cash was classified as a non-current asset on the consolidated balance sheets as the associated lease term expires more than twelve months from each respective consolidated balance sheet date.

4. Fair Value of Financial Assets and Liabilities

The following tables present information about the Company's financial assets measured at fair value on a recurring basis and indicates the level of the fair value hierarchy utilized to determine such fair values (in thousands):

	As of December 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$15,739	$ –	$ –	$15,739
	$15,739	$–	$–	$15,739

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	As of December 31, 2019			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents:				
Money market funds	$44,429	$ –	$ –	$44,429
	$44,429	$–	$–	$44,429

The following table sets forth a summary of changes in fair value of the Company's derivative liabilities for which fair value was determined by Level 3 inputs (in thousands):

	Series B Preferred Stock Tranche Obligation	Anti-Dilution Obligation	Conversion Features	Total
Balance as of December 31, 2017	$ –	$ 2,392	$ 614	$ 3,006
Fair value on measurement date	3,185	–	304	3,489
Change in fair value	2,221	1,346	81	3,648
Settlement of liability	(5,406)	(3,738)	(999)	(10,143)
Balance as of December 31, 2018	$ –	$ –	$ –	$ –

During the years ended December 31, 2018 and 2019, there were no transfers into or out of Level 3.

Series B Preferred Stock Tranche Obligation

The Series B Preferred Stock purchase agreement provided for an initial closing on March 13, 2018 and a subsequent closing upon the occurrence of a specified clinical milestone event (the "Milestone Closing"). The Milestone Closing required the Company to sell, and certain investors to purchase, a total of 7,880,000 additional shares of Series B Preferred Stock at $3.00 per share on the same terms and conditions as the initial closing (the "Preferred Stock Tranche Obligation"). The Board and Preferred Stock investors determined that the related clinical milestone event was achieved on June 25, 2018.

The Company concluded that the Preferred Stock Tranche Obligation represented a freestanding financial instrument as the underlying shares could be transferred separately from the tranche right. The freestanding financial instrument was classified as a liability on the Company's consolidated balance sheet and initially recorded at fair value. The initial fair value of the Preferred Stock Tranche Obligation recognized in connection with the Company's issuance of the Series B Preferred Stock in March 2018 was determined using a binomial model with significant inputs not observable in the market, including the estimated future value of the Company's Series B Preferred Stock, the discount rate, estimated time from the initial closing to the tranche closing, and probability of the tranche closing. Therefore, the derivative liability represented a Level 3 measurement within the fair value hierarchy.

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A change in the assumptions related to the valuation of the Preferred Stock Tranche Obligation could have a significant impact on the value of the obligation. The following reflects the significant quantitative inputs used in the valuation of the Preferred Stock Tranche Obligation upon the issuance of the associated shares of Series B Preferred Stock on March 13, 2018:

Future value of Series B Preferred Stock	$ 3.69
Discount rate	1.90%
Time from initial closing to tranche closing (in years)	0.72
Probability of tranche closing	59.10%

The Company determined the per-share future value of the Series B Preferred Stock by back-solving from the initial proceeds of the Series B Preferred Stock closing. The discount rate was estimated using the capital asset pricing model. The time to tranche closing and probability of tranche closing was determined using industry data on clinical trial timing and success.

The obligation was fully satisfied in October 2018 upon the second closing of the Series B Preferred Stock. Upon settlement of the Preferred Stock Tranche Obligation, the Company remeasured the fair value using current assumptions. Upon settlement, the time from the measurement date to the settlement date was zero, and the probability of closing was 100%. The fair value of the tranche obligation at settlement was determined using a retrospective binomial valuation, driven by the difference between the fair value of the Series B Preferred Stock upon settlement of $3.69 and the exercise price of the forward contract of $3.00.

Anti-Dilution Obligation

Under a license agreement entered into with Purdue Neuroscience Company (“Purdue”) in December 2017, as partial consideration for the exclusive license provided to the Company under the license agreement, the Company issued Purdue a right to receive additional shares of Preferred Stock, for no additional consideration from Purdue, to ensure Purdue’s ownership remained at a specified percentage throughout future issuances of the Series B Preferred Stock (the “Anti-Dilution Obligation”).

The Company determined that the Anti-Dilution Obligation represented a derivative liability as it was a freestanding instrument representing a conditional obligation to issue additional shares of the Company’s optionally redeemable equity securities in exchange for no additional consideration. The fair value of the Anti-Dilution Obligation was determined using a discounted cash flow model under the income approach, based on significant inputs not observable in the market including the estimated future value of the Series B Preferred Stock, discount rates, estimated time to liquidity, and probability of each tranche closing. Therefore, the derivative liability represented a Level 3 measurement within the fair value hierarchy. A change in the assumptions related to the valuation of the Anti-Dilution Obligation could have a significant impact on the value of the obligation. The initial fair value of the derivative liability of $2.4 million was recorded as research and development expense in December 2017.

The Company issued shares of Series B Preferred Stock to Purdue under the Anti-Dilution Obligation upon the initial and second tranche financing of the Series B Preferred Stock. The Anti-Dilution Obligation was settled in October 2018 upon the final tranche closing of the Series B Preferred Stock. Upon settlement of the Anti-Dilution Obligation, the Company remeasured the fair value using

current assumptions, resulting in an increase in fair value of $1.3 million, which was recorded in other expense in the consolidated statement of operations and comprehensive loss for the year ended December 31, 2018. The primary assumption used to determine the fair value upon settlement was the fair value of the Series B Preferred Stock, which was estimated to be $2.39 and $3.69 for shares issued pursuant to the March 31, 2018 and October 16, 2018 closings, respectively.

Conversion Features

On December 1, 2017 and January 29, 2018, the Company issued two separate unsecured convertible promissory notes (the "Convertible Notes") of $2.0 million and $1.0 million, respectively, to an investor. The Convertible Notes would automatically convert, upon the Company's next equity financing of at least $2.0 million in gross proceeds following the issuance of the Convertible Notes, into the type of equity securities issued in such financing (the "Automatic Conversion"). Pursuant to the terms of the Convertible Notes, the shares received upon conversion would be determined based on the outstanding principal, plus accrued interest, divided by 75.0% of the price paid by investors in the Company's next equity financing.

The Company determined that the conversion features represented a derivative instrument as they were based on a variable number of shares resulting in a fixed dollar amount of value being provided to the lender, and therefore were in substance a redemption feature. Furthermore, the conversion features were not determined to be clearly and closely related to the debt host contracts, and therefore were required to be separately accounted for. The initial fair value of the derivative was determined by calculating the fair values of the Convertible Notes with and without the conversion features. The difference between the fair values of the Convertible Notes in the "with" and "without" scenarios was then concluded as initial fair value of the conversion features. The valuation used significant inputs which were not observable in the market, including the probability of various exit scenarios and discount rates. Therefore, the conversion features represented a Level 3 measurement within the fair value hierarchy. The initial fair value of the conversion features for the $2.0 million and $1.0 million Convertible Notes was $0.6 million and $0.3 million, respectively.

A change in the assumptions related to the valuation of the conversion features could have a significant impact on their determined fair value. The following reflects the significant quantitative inputs used in the valuation of the conversion features upon issuance of the 2018 Convertible Note:

	January 29, 2018 Convertible Note
Probability of next equity financing scenario	75.60%
Probability of contractual maturity scenario	24.40%
Time until equity financing scenario (in years)	0.09
Discount rate	15.00%

The Company estimated the probability of each settlement scenario and time until equity financing using information obtained from discussions with investors and the Board. The discount rate was calculated based on an average of market rates of return for similar preferred stock financings.

The conversion features were settled upon the first closing of the Series B Preferred Stock in March 2018, which triggered the Automatic Conversion and resulted in the conversion of both

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Convertible Notes into shares of Series B Preferred Stock. The redemption terms of the 2018 Convertible Note were adjusted such that the discount provided on the effective price of the conversion was decreased from 25.0% to 12.5%. The fair value of the conversion features upon settlement was determined by calculating the fair values of the Convertible Notes with and without the conversion features, which was equivalent to the discount provided to the holders of the Convertible Notes.

5. Property and Equipment, Net

Property and equipment, net consisted of the following (in thousands):

	December 31,	
	2018	2019
Office furniture and equipment	$ 84	$ 113
Laboratory equipment	15	48
Computer equipment	5	5
Total property and equipment	104	166
Less: Accumulated depreciation	(1)	(38)
Property and equipment, net	$ 103	$ 128

Depreciation expense was not material to the years ended December 31, 2018 and 2019.

6. Accrued Expenses

Accrued expenses consisted of the following (in thousands):

	December 31,	
	2018	2019
Accrued external research and development expenses	$ 645	$ 1,552
Accrued personnel-related expenses	732	1,059
Accrued license fees	–	363
Accrued other	377	481
Total accrued expenses	$ 1,754	$ 3,455

7. Convertible Promissory Notes

On December 1, 2017 and January 29, 2018, the Company issued the Convertible Notes for $2.0 million and $1.0 million, respectively, to an investor. The Convertible Notes bore an annual interest rate of 6%.

Upon issuance, the proceeds were allocated to the Convertible Notes and the derivative instrument resulting from the conversion features (Note 4). The Company remeasured the conversion features to fair value at each reporting date, and recognized a loss of $0.1 million in other expense in the consolidated statement of operations and comprehensive loss for the year ended December 31, 2018. Additionally, the Company incurred interest expense on the Convertible Notes of $0.1 million during the year ended December 31, 2018, which was reflected in interest expense in the consolidated statement of operations and comprehensive loss.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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In March 2018, both Convertible Notes were settled in full upon the first closing of the initial tranche of the Series B Preferred Stock, which triggered the Automatic Conversion and resulted in the conversion of both Convertible Notes into 1,286,185 shares of Series B Preferred Stock at a specified discount. The transaction was accounted for as an extinguishment of debt under ASC 470-50. As the lender was a related party, the settlement was in substance a capital transaction and therefore the impact upon extinguishment was recognized as an adjustment to accumulated deficit.

8. Commitments and Contingencies

Leases

In October 2018, the Company entered into a sublease agreement for office space located in Cambridge, Massachusetts which expires on December 30, 2021, with no option to renew or terminate early. The base rent increases by approximately 1% annually. The Company issued a letter of credit to the landlord related to the security deposit, secured by restricted cash, which is recorded in other assets on the accompanying consolidated balance sheets. This lease qualifies as an operating lease. Prior to entering into this sublease arrangement, the Company rented office space from a related party.

In January 2019, the Company entered into an arrangement with a third party to sublease a portion of its Cambridge, Massachusetts office space. This sublease was terminated in November 2019.

The following table summarizes the presentation of the operating lease in the Company's consolidated balance sheets as of December 31, 2019 (in thousands):

Assets:	
Operating lease right-of-use assets	$1,450
Liabilities:	
Current operating lease liabilities	$ 696
Non-current portion of operating lease liabilities	763
Total lease liabilities	$1,459

The following table summarizes total lease costs recognized in the Company's consolidated statements operations for the year ended December 31, 2019 (in thousands):

Operating lease cost	$ 782
Variable lease costs	3
Sublease income	(31)
Total lease costs	$ 754

Variable lease costs were primarily related to operating expenses, taxes and insurance associated with the operating lease, which were assessed based on the Company's proportionate share of such costs for the leased premises. As these costs are generally variable in nature, they are not included in the measurement of the operating lease right-of-use asset and related lease liability. Total lease costs are included as operating expenses in the Company's consolidated statement of operations and comprehensive loss. Total rent expense for the year ended December 31, 2018 was $0.3 million.

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Future lease payments under non-cancelable lease agreements as of December 31, 2019 were as follows (in thousands):

Year Ended December 31,	Future Lease Payments
2020	$ 783
2021	791
Total future lease payments	$ 1,574
Less: interest	115
Present value of operating lease liabilities	$ 1,459

The weighted average remaining lease term and weighted average incremental borrowing rate of our operating leases as of December 31, 2019 were as follows:

Weighted average remaining lease term (in years)	2.0
Weighted average incremental borrowing rate	8.0%

Under the prior lease accounting guidance, minimum rental commitments under non-cancelable leases as of December 31, 2018 were as follows (in thousands):

Year Ended December 31,	Minimum Lease Payments
2019	$ 774
2020	783
2021	791
	$ 2,348

Legal Proceedings

The Company, from time to time, may be party to litigation arising in the ordinary course of business. The Company was not subject to any legal proceedings during the years ended December 31, 2018 and 2019, and no material legal proceedings are currently pending or threatened.

Purchase Orders

The Company has agreements with third parties for various services, including services related to research, preclinical and clinical operations and support, for which the Company is not contractually able to terminate for convenience to avoid future obligations to the vendors. Certain agreements provide for termination rights subject to termination fees or wind down costs. Under such agreements, the Company is contractually obligated to make certain payments to vendors, primarily to reimburse them for their unrecoverable outlays incurred prior to cancelation. The actual amounts the Company could pay in the future to the vendors under such agreements may differ from the purchase order amounts due to cancellation provisions.

PRAXIS PRECISION MEDICINES, INC.

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Indemnification Agreements

The Company enters into indemnification agreements and agreements containing indemnification provisions in the ordinary course of business. Pursuant to these agreements, the Company agrees to indemnify, hold harmless, and to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally the Company's business partners, in connection with any U.S. patent or any copyright or other intellectual property infringement claim by any third party with respect to the Company's products. The term of these indemnification agreements is generally perpetual upon execution of the agreement. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited. The Company has never incurred costs to defend lawsuits or settle claims related to these indemnification agreements.

9. Redeemable Convertible Preferred Stock

As of December 31, 2019, the authorized capital stock of the Company included 36,724,132 shares of $0.0001 par value Preferred Stock, of which 8,075,799 shares have been designated as Series A Preferred Stock, 14,913,704 shares have been designated as Series B Preferred Stock, 2,666,666 shares have been designated as Series B-1 Preferred Stock and 11,067,963 shares have been designated as Series C Preferred Stock.

During the year ended December 31, 2018, the Company issued a total of 12,333,333 shares of Series B Preferred Stock in two separate closings at a purchase price of $3.00 per share for gross cash proceeds of $37.0 million, and incurred issuance costs of $0.2 million. The Company also issued an aggregate of 1,286,185 shares of Series B Preferred Stock upon the conversion of the Convertible Notes at an average conversion price of $2.40 per share. The Company also issued 1,294,186 shares of Series B Preferred Stock in connection with the anti-dilutive provision within the Purdue License Agreement. The issuance of the Series B Preferred Stock resulted in changes to certain rights, preferences and privileges of the Series A Preferred Stock. The Company concluded such changes were not significant and resulted in a modification, rather than an extinguishment, of the Series A Preferred Stock. The changes to the terms of the Series A Preferred Stock did not result in incremental value to the shareholders, and therefore there was no impact to the accounting for the Series A Preferred Stock.

On June 18, 2019, the Company entered into the Series B-1 Preferred Stock Purchase Agreement which authorized the sale and issuance of up to 2,666,666 shares of its Series B-1 Preferred Stock at a purchase price of $3.75 per share. During the year ended December 31, 2019, the Company issued all 2,666,666 shares of Series B-1 Preferred Stock for gross cash proceeds of $10.0 million, and incurred an immaterial amount of issuance costs. The issuance of the Series B-1 Preferred Stock resulted in changes to certain rights, preferences and privileges of the Series A Preferred Stock and the Series B Preferred Stock. The Company concluded that such changes were not significant and resulted in a modification, rather than an extinguishment, of the Series A Preferred Stock and the Series B Preferred Stock. The changes to the terms of the Series A Preferred Stock and the Series B Preferred Stock did not result in incremental value to the shareholders, and therefore there was no impact to the accounting for the Series A Preferred Stock and the Series B Preferred Stock.

On November 18, 2019, the Company entered into the Series C Preferred Stock Purchase Agreement which authorized the sale and issuance of up to 5,825,243 shares at $5.15 per share. On December 10, 2019, the Company executed Amendment No. 1 and Joinder to the Series C Preferred Stock Purchase Agreement which authorized the sale and issuance of an additional 5,242,720 shares

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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at $5.15 per share. During the year ended December 31, 2019, the Company issued 9,805,827 shares of Series C Preferred Stock for gross cash proceeds of $50.5 million, and incurred issuance costs of $0.2 million. Although there were multiple closings of the Series C Preferred Stock, there was no obligation under the initial closing for investors to purchase, or for the Company to sell to such investors, additional shares of Series C Preferred Stock. The issuance of the Series C Preferred Stock resulted in changes to certain rights, preferences and privileges of the Series A Preferred Stock, the Series B Preferred Stock and the Series B-1 Preferred Stock. The Company concluded that such changes were not significant and resulted in a modification, rather than an extinguishment, of the Series A Preferred Stock, the Series B Preferred Stock and the Series B-1 Preferred Stock. The changes to the terms of the Series A Preferred Stock, the Series B Preferred Stock and the Series B-1 Preferred Stock did not result in incremental value to the shareholders, and therefore there was no impact to the accounting for the Series A Preferred Stock, the Series B Preferred Stock and the Series B-1 Preferred Stock.

The Preferred Stock consisted of the following (in thousands, except share amounts):

	As of December 31, 2018					
	Shares Authorized	Preferred Stock Issued and Outstanding	Carrying Value	Liquidation Preference	Redemption Value	Common Stock Issuable Upon Conversion
Series A Preferred Stock	8,075,799	8,075,799	$ 9,284	$ 9,284	$ 9,284	8,075,799
Series B Preferred Stock	14,927,584	14,913,704	46,436	46,381	46,381	14,913,704
	23,003,383	22,989,503	$ 55,720	$ 55,665	$ 55,665	22,989,503

	As of December 31, 2019					
	Shares Authorized	Preferred Stock Issued and Outstanding	Carrying Value	Liquidation Preference	Redemption Value	Common Stock Issuable Upon Conversion
Series A Preferred Stock	8,075,799	8,075,799	$ 9,932	$ 9,932	$ 9,932	8,075,799
Series B Preferred Stock	14,913,704	14,913,704	49,969	49,969	49,969	14,913,704
Series B-1 Preferred Stock	2,666,666	2,666,666	10,431	10,431	10,431	2,666,666
Series C Preferred Stock	11,067,963	9,805,827	50,789	50,789	50,789	9,805,827
	36,724,132	35,461,996	$ 121,121	$ 121,121	$ 121,121	35,461,996

Common stock issuable upon conversion in the tables above represents shares of common stock issuable upon an automatic conversion in the event of a qualified public offering, pursuant to the Company's Amended and Restated Certificate of Incorporation.

PRAXIS PRECISION MEDICINES, INC.

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Rights, Preferences and Privileges

Pursuant to the Company's Amended and Restated Certificate of Incorporation, the Series A Preferred Stock, Series B Preferred Stock, Series B-1 Preferred Stock and Series C Preferred Stock have the following rights, preferences and privileges:

Voting Rights

The holders of outstanding shares of the Preferred Stock are entitled to vote, together with the holders of common stock, on all matters submitted to the stockholders for a vote, and are entitled to the number of votes equal to the number of whole shares of common stock into which such holders of the Preferred Stock could convert on the record date for determining stockholders entitled to vote. Except for the actions requiring the approval or consent of the majority of the holders of the Preferred Stock, the holders of the Preferred Stock will vote together with the holders of common stock and vote as a single class. The holders of the Series A Preferred Stock, exclusively and as a separate class, are entitled to elect two directors of the Company. The holders of the Series B Preferred Stock and Series B-1 Preferred Stock, exclusively and together as a separate class, are entitled to elect two directors of the Company. The holders of common stock and of any other class or series of voting stock (including the Preferred Stock), exclusively and voting as a single class, are entitled to elect the balance of total number of directors of the Company.

Dividends

The holders of the Series A Preferred Stock, Series B Preferred Stock, Series B-1 Preferred Stock and Series C Preferred Stock are entitled to accrue cumulative dividends at an annual rate of $0.08, $0.24, $0.30 and $0.412 per share, respectively, subject to adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Preferred Stock. Dividends accrue from day to day whether or not declared by the Board, and are payable only when, as, and if declared by the Board. As of December 31, 2019, no dividends have been declared or paid by the Company since its inception.

The Company's cumulative dividends on its Preferred Stock were as follows (in thousands):

	As of December 31,	
	2018	2019
Series A Preferred Stock	$ 1,209	$ 1,857
Series B Preferred Stock	1,639	5,228
Series B-1 Preferred Stock	–	431
Series C Preferred Stock	–	289
	$ 2,848	$ 7,805

No dividends may be declared, paid or set aside to any other class or series of capital stock (other than dividends on shares of common stock payable in common stock) unless, in addition to obtaining any consents otherwise required in the Company's certificate of incorporation, the holders of the Preferred Stock first receive a dividend on each outstanding share in an amount at least equal to the greater of: (i) all accrued and unpaid dividends and (ii) in the case of a dividend being distributed to common stock or any class or series of capital stock that is convertible into common stock, the equivalent dividend on an as-converted basis or (iii) in the case of a dividend being distributed on a series or class not convertible into common stock, an additional dividend equal to a dividend rate

calculated based on the respective original issue price of the Preferred Stock. The original issue price per share is equal to $1.00 for the Series A Preferred Stock, $3.00 for the Series B Preferred Stock, $3.75 for the Series B-1 Preferred Stock and $5.15 for the Series C Preferred Stock. The holders of the Series C Preferred Stock, Series B Preferred Stock and Series B-1 Preferred Stock are entitled to receive dividends prior to any dividends on the Series A Preferred Stock.

Liquidation Rights

In the event of any voluntary or involuntary liquidation event, dissolution, winding up of the Company or upon the occurrence of certain events designated by a majority of the holders of the Preferred Stock, and at least two out of three specific holders, to be a deemed liquidation event, each holder of the then outstanding Series C Preferred Stock, Series B-1 Preferred Stock and Series B Preferred Stock will be entitled to receive, prior and in preference to any distributions to the holders of Series A Preferred Stock and common stock, an amount equal to the greater of (i) original issuance price (adjusted in the event of any stock dividend, stock split, combination or other similar activity) plus any cumulative accrued dividends, whether or not declared, with any other dividends declared but unpaid thereon, or (ii) the amount such holder would have received if such holder had converted its shares into common stock immediately prior to such liquidation event.

After the payment of all preferential amounts to the holders of the Series C Preferred Stock, Series B-1 Preferred Stock and Series B Preferred Stock, each holder of the then outstanding Series A Preferred Stock will be entitled to receive, prior and in preference to any distributions to the holders of common stock, an amount equal to the greater of (i) original issuance price (adjusted in the event of any stock dividend, stock split, combination or other similar activity) plus any cumulative accrued dividends, whether or not declared, with any other dividends declared but unpaid thereon, or (ii) the amount such holder would have received if such holder had converted its shares into common stock immediately prior to such liquidation event.

After payments have been made in full to the holders of the Preferred Stock, then, to the extent available, the remaining amounts will be distributed among the holders of the shares of common stock, pro rata based on the number of shares held by each holder.

Conversion

Each share of the Preferred Stock is convertible, at any time, at the option of the holder, and without the payment of additional consideration, into such shares of non-assessable shares of common stock as is determined by dividing the original issue price by the applicable conversion price in effect at the time of conversion. The applicable conversion price for the Series A Preferred Stock, Series B Preferred Stock, Series B-1 Preferred Stock and Series C Preferred Stock is initially equal to $1.00, $3.00, $3.75 and $5.15, respectively. Each share of the Preferred Stock will be automatically converted into common stock at the applicable conversion ratio then in effect for each series of the Preferred Stock upon either (i) the closing of the sale of shares of common stock at a price of at least $10.30 per share in a firm-commitment underwritten public offering pursuant to an effective registration statement resulting in at least $75.0 million of gross proceeds and the listing of the Company's common stock on the New York Stock Exchange, The Nasdaq Global Select Market, or The Nasdaq Global Market or (ii) the date and time, or the occurrence of an event, specified by vote or written consent of the holders of a majority of the outstanding Preferred Stock, voting together as a single class and at least two of three specific holders. As of December 31, 2019, each share of the Preferred Stock was convertible into one share of common stock and may be adjusted in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Preferred Stock.

The Company accounts for potential beneficial conversion features at the time of issuance. The Company's common stock into which each series of the Company's Preferred Stock is convertible had an estimated fair value less than the effective conversion prices of the Preferred Stock at the time of each of the issuances of the Preferred Stock. Therefore, there was no intrinsic value on the respective commitment dates.

Redemption

Each series of the Preferred Stock is redeemable at a price equal to the applicable original issuance price per share (adjusted in the event of any stock dividend, stock split, combination or other similar activity), plus any cumulative accrued dividends, whether or not declared together with any other dividends declared but unpaid, in three annual installments commencing not more than 60 days on or after November 18, 2024 at the written election of at least a majority of the holders of the Preferred Stock voting together as a single class and at least two out of three specific parties.

10. Common Stock

As of December 31, 2018 and 2019, the authorized capital stock of the Company included 33,000,000 and 46,000,000 shares of common stock, $0.0001 par value, respectively.

Rights, Preferences and Privileges

The voting, dividend and liquidation rights of the holders of the Company's common stock are subject to and qualified by the rights, powers and preferences of the holders of the Preferred Stock. The Company's common stock has the following rights, preferences and privileges:

Voting Rights

Each share of common stock entitles the holder to one vote, together with the holders of the Preferred Stock, on all matters submitted to the stockholders for a vote.

Dividends

The holders of shares of common stock are not entitled to receive dividends.

Liquidation Rights

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, after the payment of all preferential amounts required to be paid to the holders of the Preferred Stock, the remaining assets of the Company available for distribution to its stockholders will be distributed to the holders of common stock on a pro rata basis based on the number of shares held by each such holder.

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Shares Reserved for Future Issuance

The Company has reserved the following shares of common stock for future issuance:

	December 31,	
	2018	2019
Series A Preferred Stock	8,075,799	8,075,799
Series B Preferred Stock	14,913,704	14,913,704
Series B-1 Preferred Stock	–	2,666,666
Series C Preferred Stock	–	9,805,827
Shares reserved for vesting of restricted common stock	559,375	103,125
Shares reserved for exercise of outstanding stock options	2,551,876	3,498,270
Shares reserved for future awards under the 2017 Stock Incentive Plan	2,017,335	1,320,554
Total shares of authorized common stock reserved for future issuance	28,118,089	40,383,945

11. Stock-Based Compensation

2017 Stock Incentive Plan

On May 9, 2017, the Board adopted the 2017 Stock Incentive Plan (the “2017 Plan”). The 2017 Plan allows the Company to grant stock options, restricted stock, restricted stock units and other stock-based awards to employees, officers, directors, consultants and advisors of the Company. The 2017 Plan is administered by the Board, which has the authority to grant awards and determine the terms of awards under the 2017 Plan, provided that generally the exercise price per share of stock options granted may not be less than 100% of the fair market value of a share of the Company’s common stock on the date of grant, and the term of stock options granted may not exceed ten years.

The total number of shares of common stock authorized for issuance under the 2017 Plan as of December 31, 2018 and 2019 was 4,794,211 shares and 5,043,824 shares, respectively.

As of December 31, 2019, the Company has only issued stock options and restricted stock under the 2017 Plan. Stock options issued comprise service-based awards granted to employees and non-employee consultants. Stock options and restricted stock issued under the 2017 Plan have vesting conditions in which 25% vests upon the first anniversary of a specified vesting commencement date, and the remaining 75% vests in 36 monthly installments over the remaining three years. Vesting of stock options is subject to the recipient’s continued employment or service. The Company has the right to repurchase any unvested shares of restricted stock held by a recipient during the vesting period if the relationship between the recipient and the Company has terminated. Stock options issued under the 2017 Plan expire ten years from the date of grant.

Shares that expire, are terminated, surrendered or canceled under the 2017 Plan without having been fully exercised will be available for future awards. In addition, shares of common stock that are tendered to the Company by a participant to exercise an award are added to the number of shares of common stock available for future awards. Upon stock option exercise, the Company issues new shares and delivers them to the participant.

As of December 31, 2019, the Company did not hold any treasury shares.

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Restricted Common Stock

Prior to the adoption of the 2017 Plan, the Company granted restricted common stock in 2016 with time-based vesting conditions to certain employees and non-employee founders of the Company pursuant to individual award agreements. The restricted common stock granted pursuant to these agreements vests either: (i) 25% upon vesting commencement or the first anniversary of a specified vesting commencement date, and the remaining 75% monthly over 36 months thereafter, (ii) monthly over 48 months after a specified vesting commencement date, or (iii) monthly over 12 months from a specified vesting commencement date. The Company has the right to repurchase the unvested shares held by a recipient during the vesting period if the relationship between the recipient and the Company has terminated. Shares of restricted common stock are not accounted for as outstanding common stock until they have vested. Unvested shares of restricted common stock may not be sold or transferred by the holder. The Company did not grant any restricted common stock during the years ended December 31, 2018 or 2019.

The following table summarizes all of the Company's restricted common stock activity, including restricted common stock issued under the 2017 Plan and under individual award agreements prior to the adoption of the 2017 Plan:

	Shares	Weighted Average Grant Date Fair Value
Unvested as of December 31, 2018	559,375	$ 0.01
Issued	–	–
Vested	(456,250)	0.01
Repurchased	–	–
Unvested as of December 31, 2019	103,125	$ 0.03

The total fair value of restricted common stock that vested during the years ended December 31, 2018 and 2019 was $0.6 million and $0.6 million, respectively.

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Stock Options

The following table summarizes the Company's stock option activity:

	Number of Shares	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term (In years)	Aggregate Intrinsic Value (In thousands)
Outstanding as of December 31, 2018	2,551,876	$ 1.01		
Granted	946,394	1.54		
Exercised	–	–		–
Cancelled or Forfeited	–	–		
Outstanding as of December 31, 2019	3,498,270	$ 1.15	9.00	$ 5,107
Exercisable as of December 31, 2019	1,488,397	$ 1.02	8.75	$ 2,372
Vested and expected to vest as of December 31, 2019	3,498,270	$ 1.15	9.00	$ 5,107

The aggregate intrinsic value of stock options is calculated as the difference between the exercise price of the underlying stock options and the estimated fair value of the Company's common stock for those stock options that had exercise prices lower than the estimated fair value of the Company's common stock at December 31, 2019.

Stock Option Valuation

The assumptions that the Company used in the Black-Scholes option pricing model to determine the grant-date fair value of stock options granted to employees, members of the Board and non-employees on the date of grant were as follows:

	Year Ended December 31,	
	2018	2019
Risk-free interest rate	3.10 – 3.20%	1.55%
Expected term (in years)	6.00 – 10.00	6.00
Expected volatility	80.03%	79.09%
Expected dividend yield	0.00%	0.00%
Fair value per share of common stock	$ 1.06	$ 1.54

The weighted-average grant-date fair value of the Company's stock options granted during the years ended December 31, 2018 and 2019 was $0.77 and $1.05, respectively.

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Stock-Based Compensation

Stock-based compensation expense was allocated as follows (in thousands):

	Year Ended December 31,	
	2018	2019
Research and development	$ 181	$ 430
General and administrative	398	238
Total stock-based compensation expense	$ 579	$ 668

As of December 31, 2019, total unrecognized compensation cost related to unvested stock-based awards was $1.6 million, which is expected to be recognized over a weighted-average period of 2.69 years.

12. Significant Agreements

Purdue License Agreement

On December 31, 2017, the Company entered into a License Agreement with Purdue (the "Purdue License Agreement"), pursuant to which Purdue granted the Company exclusive rights under certain Purdue know-how to research, develop and commercialize pharmaceutical products concerning a $GABA_A$ positive allosteric modulator. The Company is obligated to make future milestone payments based on the achievement of specified development and sales milestones up to $33.0 million. Furthermore, the Company is required to pay Purdue royalties of a low-single-digit percentage of annual net sales of licensed products.

Under the Purdue License Agreement, Purdue agreed to purchase $0.6 million of shares of Series B Preferred Stock. In addition, as consideration for the license obtained, the Company issued Purdue the Anti-Dilution Obligation to ensure Purdue's ownership remained at a specified percentage throughout the Series B Preferred Stock financing (Note 4). The Company concluded that the Purdue License Agreement represented the acquisition of in-process research and development assets with no alternative future use. Therefore, the initial fair value of the Anti-Dilution Obligation of $2.4 million was expensed as research and development in December 2017.

The Purdue License Agreement will remain in effect until the expiration of the Company's royalty obligation for all licensed products. Either the Company or Purdue may terminate the agreement in the event of a material breach by the other party and fails to cure such breach within a certain period of time. Either party may voluntarily terminate the agreement with prior notice. If the agreement is voluntarily terminated by Purdue, the Company's license rights will survive such termination and such rights will become fully paid, perpetual and irrevocable.

The Anti-Dilution Obligation was settled in October 2018. As of December 31, 2019, none of the developmental or sales milestones under the Purdue License Agreement were achieved.

RogCon and Ionis Agreements

During 2018, the Company began negotiating a license agreement with RogCon Inc. ("RogCon") for intellectual property related to treating SCN2A mutations in epilepsy, which is recognized as the

second most common genetic cause of epilepsy. RogCon had an existing collaboration with Ionis Pharmaceuticals, Inc. ("Ionis") and as a result the Company needed to negotiate an agreement with Ionis in order to complete the license agreement with RogCon. On December 21, 2018, the Company entered into an agreement with RogCon to advance RogCon a deposit of up to $1.0 million on the pending license agreement while the agreement with Ionis was being negotiated. The deposit was fully refundable to the Company. As of December 31, 2018, the outstanding balance was $0.6 million and is included within prepaid expenses and other current assets on the Company's accompanying consolidated balance sheet. On September 11, 2019, the Company entered into both a Cooperation and License Agreement (the "License Agreement") with RogCon, and a Research, Collaboration, Option and License Agreement (the "Collaboration Agreement") with Ionis. The agreements were entered into contemporaneously to enable the parties to advance their collective efforts related to SCN2A. Upon execution of the License Agreement, the $1.0 million outstanding balance of the deposit was applied toward the purchase price of the License Agreement.

RogCon Agreement

Under the License Agreement, RogCon granted to the Company an exclusive, worldwide license under RogCon's intellectual property to research, develop and commercialize products for the treatment of all forms of epilepsy and/or neurodevelopmental disorders in each case caused by any mutation of the SCN2A gene. Under the License Agreement, the Company will conduct, at its own cost and expense, the research and development activities assigned to it under the research plan. In addition, the Company is responsible for reimbursing RogCon for any costs associated with research and development activities RogCon performs at the request of the Company. As part of the agreement, the Company agreed to provide up-front consideration of $2.1 million, consisting of the $1.0 million deposit, $0.7 million in cash reimbursements for certain historical costs previously incurred by RogCon, and $0.4 million for the retirement of existing loan balances as of September 11, 2019.

The Company concluded that the License Agreement represented the acquisition of in-process research and development assets with no alternative future use. Therefore, the aggregate acquisition cost of $2.2 million, consisting of the $2.1 million of up-front consideration and $0.1 million of acquisition costs, was expensed as research and development on September 11, 2019.

Subsequent to September 11, 2019, the Company will reimburse RogCon for its out-of-pocket costs incurred for activities performed under the License Agreement. The Company expenses these costs as incurred as research and development. Since the acquisition date, the Company expensed $0.1 million for the reimbursement of RogCon's out-of-pocket costs in the year ended December 31, 2019.

Additionally, the Company may pay RogCon a milestone payment of $3.0 million and profit share payments. The $3.0 million milestone payment will become due when the first profit share payment has become due and certain contingent payments have become payable to Ionis under the Collaboration Agreement, which are subject to the Company exercising its option to obtain license rights to a development candidate, as well as other contingent events. The profit share payments will be based on a low-double-digit percentage of net profits, depending on sales volume.

The License Agreement, unless earlier terminated, will continue until the latest of: (i) expiration of all patent rights within RogCon patents, (ii) the Company and its affiliates certify they have abandoned

the research, development and commercialization of product with no intention to re-establish such activities, and (iii) no third party is obligated to pay the Company or its affiliates any amounts that comprise net sublicense revenue. Either party may terminate the License Agreement for material breach or insolvency of the other party. Additionally, the Company may terminate for convenience with prior written notice to RogCon. Upon termination by either party, all rights and licenses granted by RogCon to the Company will revert back to RogCon.

Ionis Collaboration Agreement

Under the Collaboration Agreement, both parties will participate in research activities related to the downregulation of SCN2A gene products associated with the treatment of any and all forms of epilepsy and/or neurodevelopmental disorders in each case caused by any mutation of the SCN2A gene, other than one severe type of epilepsy. Ionis will also be responsible for identifying a development candidate and conducting an IND-enabling toxicology study. The Company will reimburse Ionis for any out-of-pocket costs incurred related to the research activities, identification of a development candidate and conducting an IND-enabling toxicology study. Additionally, the Company agreed to reimburse $0.3 million of costs incurred by Ionis for the performance of research activities prior to the execution of the Collaboration Agreement, which the Company recognized as research and development expense. The reimbursement of out-of-pocket costs is recognized as research and development expense as incurred. Inclusive of the up-front payment of $0.3 million, the Company expensed a total of $0.6 million as research and development under the Collaboration Agreement for the year ended December 31, 2019.

Ionis granted the Company an exclusive option to obtain the rights and license related to the development candidate, which the Company may exercise following completion of the IND-enabling toxicology study. Upon option exercise, the Company will pay Ionis a $2.0 million license fee. After option exercise, the Company is responsible for clinical development and commercialization of the development candidate. If the option is not exercised, the Collaboration Agreement will expire, and the Company will have no further rights to the development candidate. Additionally, if the option is not exercised, at the request of Ionis, the Company will assign the RogCon License Agreement to Ionis. The Company concluded that there is no accounting recognition for the exclusive option unless and until such option is exercised because it is a unilateral right of the Company that is priced at an amount that approximates fair value.

If the Company exercises its exclusive option, Ionis may be entitled to development milestone payments, additional milestone payments, and sales royalties or sublicense fees.

The Collaboration Agreement will continue until the expiration of all payment obligations to Ionis, unless earlier terminated. Either party may terminate the Collaboration Agreement upon material breach or insolvency of the other party or if Ionis is unable to identify a development candidate. Ionis may terminate if the Company fails to achieve a performance milestone. The Company may terminate for convenience with prior written notice to Ionis. Upon termination by the Company for convenience, the Company will stop selling all products, subject to certain wind-down provisions, and all products will revert back to Ionis.

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Continued)

13. Net Loss per Share and Unaudited Pro Forma Net Loss per Share

Net Loss per Share

Basic and diluted net loss per share attributable to common stockholders was calculated as follows (in thousands, except share and per share data):

	Year Ended December 31,	
	2018	2019
Numerator:		
Net loss	$ (26,535)	$ (35,512)
Accretion and cumulative dividends on redeemable convertible preferred stock	(2,296)	(5,170)
Loss on conversion of convertible notes	(392)	–
Net loss attributable to common stockholders	$ (29,223)	$ (40,682)
Denominator:		
Weighted average common shares outstanding, basic and diluted	2,776,947	3,273,420
Net loss per share attributable to common stockholders, basic and diluted	$ (10.52)	$ (12.43)

The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the calculation of diluted net loss per share attributable to common stockholders for the periods indicated because including them would have been anti-dilutive:

	Year Ended December 31,	
	2018	2019
Series A redeemable convertible preferred stock	8,075,799	8,075,799
Series B redeemable convertible preferred stock	14,913,704	14,913,704
Series B-1 redeemable convertible preferred stock	–	2,666,666
Series C redeemable convertible preferred stock	–	9,805,827
Outstanding stock options	2,551,876	3,498,270
Unvested restricted common stock	559,375	103,125
	26,100,754	39,063,391

The shares of common stock issuable upon conversion of the Preferred Stock assume automatic conversion in the event of a qualified public offering.

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Continued)

Unaudited Pro Forma Net Loss per Share

Unaudited pro forma basic and diluted net loss per share attributable to common stockholders was calculated as follows (in thousands, except share and per share data):

	Year Ended December 31, 2019
Numerator:	
Net loss attributable to common stockholders	$ (40,682)
Accretion and cumulative dividends on redeemable convertible preferred stock	5,170
Pro forma net loss attributable to common stockholders	$ (35,512)
Denominator:	
Weighted average common shares outstanding, basic and diluted	3,273,420
Pro forma adjustment to reflect the automatic conversion of redeemable convertible preferred stock into common stock upon the completion of the proposed initial public offering	25,125,478
Pro forma weighted average common shares outstanding, basic and diluted	28,398,898
Pro forma net loss per share attributable to common stockholders, basic and diluted	$ (1.25)

14. Income Taxes

The Company maintains a full valuation allowance on its U.S. net deferred tax assets due to the uncertainty of future taxable income. The Company did not recognize an income tax benefit in the years ended December 31, 2018 or 2019 related to its U.S. operations due to the uncertainty regarding future taxable income. In the years ended December 31, 2018 and 2019, the difference between the statutory tax rate in the U.S. and the Company's effective tax rate was due primarily to the valuation allowance recorded to offset any potential tax benefit. The income tax provision and benefit recognized for the years ended December 31, 2018 and 2019, respectively, related to income tax associated with the Company's operations in Australia.

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Continued)

The reconciliation of the U.S. statutory income tax rate to the Company's effective tax rate is as follows:

	Year Ended December 31,	
	2018	2019
Federal statutory income tax rate	21.0%	21.0%
State taxes, net of federal benefit	5.1%	6.0%
Federal and state research and development credits	0.7%	2.9%
Non-deductible items	(3.6)%	(0.4)%
Foreign	(0.1)%	0.2%
Change in valuation allowance	(23.1)%	(29.6)%
Other	(0.5)%	0.1%
Effective income tax rate	(0.5)%	0.2%

Net deferred tax assets consisted of the following (in thousands):

	December 31,	
	2018	2019
Deferred tax assets:		
Net operating loss carryforwards	$ 6,931	$ 14,502
Amortization	1,776	3,512
Research and development credits	196	1,230
Accrued expenses	175	340
Foreign exchange loss	73	–
Leases	–	396
Stock-based compensation	25	60
Total gross deferred tax assets	$ 9,176	$ 20,040
Less: Valuation allowance	(9,176)	(19,647)
Net deferred tax assets	$ –	$ 393
Deferred tax liabilities:		
Operating lease right-of-use asset	–	(393)
Total gross deferred tax liabilities	–	(393)
Net deferred tax assets	$ –	$ –

As of December 31, 2018 and 2019, the Company had U.S. federal net operating loss carryforwards which may be able to offset future income tax liabilities of approximately $25.6 million and $53.4 million, respectively. Federal net operating losses of $7.7 million will expire at various dates through 2037 and approximately $45.7 million may be carried forward indefinitely. As of December 31, 2018 and 2019, the Company also had state net operating loss carryforwards of approximately

$25.1 million and $52.0 million, respectively, which may be available to offset future income tax liabilities and expire at various dates through 2039.

As of December 31, 2018 and 2019, the Company had federal research and development tax credit carryforwards of approximately $0.1 million and $0.9 million, respectively, available to reduce future tax liabilities which expire at various dates through 2039. As of December 31, 2018 and 2019, the Company had state research and development tax credit carryforwards of approximately $0.1 million and $0.4 million, respectively, available to reduce future tax liabilities which expire at various dates through 2034. The Company has generated research credits but has not conducted a study to document the qualified activity. This study may result in an adjustment to the Company's research and development credit carryforwards; however, until a study is completed, and any adjustment is known, no amounts are being presented as an uncertain tax position. A full valuation allowance has been provided against the Company's research and development credits and, if an adjustment is required, this adjustment would be offset by an adjustment to the deferred tax asset established for the research and development credit carryforwards and the valuation allowance.

Under the provisions of the Internal Revenue Code, the net operating loss and tax credit carryforwards are subject to review and possible adjustment by the Internal Revenue Service and state tax authorities. Net operating loss and tax credit carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest of significant shareholders over a three-year period in excess of 50%, as defined under Sections 382 and 383 of the Internal Revenue Code, respectively, as well as similar state provisions. This could limit the amount of tax attributes that can be utilized annually to offset future taxable income or tax liabilities. The amount of the annual limitation is determined based on the value of the Company immediately prior to the ownership change. Subsequent ownership changes may further affect the limitation in future years. The Company has not conducted a study to assess whether a change of control has occurred or whether there have been multiple changes of control since inception due to the significant complexity and cost associated with such a study. If the Company has experienced a change of control, as defined by Section 382, at any time since inception, utilization of the net operating loss carryforwards or research and development tax credit carryforwards would be subject to an annual limitation under Section 382, which is determined by first multiplying the value of the Company's stock at the time of the ownership change by the applicable long-term tax-exempt rate, and then could be subject to additional adjustments, as required. Any limitation may result in expiration of a portion of the net operating loss carryforwards or research and development tax credit carryforwards before utilization. Further, until a study is completed by the Company and any limitation is known, no amounts are being presented as an uncertain tax position.

ASC 740 requires a valuation allowance to reduce the deferred tax assets reported if, based on the weight of the evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. After consideration of all of the evidence, both positive and negative, the Company has recorded a valuation allowance against its deferred tax assets at December 31, 2018 and 2019 because management has determined that it is more likely than not that the Company will not recognize the benefits of its federal and state deferred tax assets, primarily due to its history of cumulative net losses incurred since inception and its lack of commercialization of any products or generation of any revenue from product sales since inception. As a result, a valuation allowance of $9.2 million and $19.6 million has been established at December 31, 2018 and 2019, respectively. Management reevaluates the positive and negative evidence at each reporting period.

The valuation allowance increased by approximately $6.1 million and $10.5 million during the years ended December 31, 2018 and 2019, respectively, due primarily to the generation of net operating losses.

The Company has not recorded any amounts for unrecognized tax benefits as of December 31, 2018 and 2019. The Company's policy is to record interest and penalties related to uncertain tax positions as part of its income tax provision. As of December 31, 2018 and 2019, the Company had no accrued interest or penalties related to uncertain tax positions and no such amounts have been recognized in the Company's consolidated statement of operations and comprehensive loss for either year ended December 31, 2018 or 2019. In many cases, the Company's uncertain tax positions are related to years that remain subject to examination by relevant tax authorities. The statute of limitations for federal and state tax authorities is open for tax years ended December 31, 2016 through December 31, 2019. Since the Company is in a loss carryforward position, the Company is generally subject to examination by the U.S. federal, state and local income tax authorities for all tax years in which a loss carryforward is available.

15. Related Party Transactions

During the year ended December 31, 2019, the Company reimbursed $0.2 million of third-party recruiting costs incurred by a significant shareholder on behalf of the Company. These amounts were recorded in general and administrative expenses during the year ended December 31, 2019 and were within accrued expenses as of December 31, 2019.

In December 2017 and January 2018, the Company issued the Convertible Notes to a significant shareholder with Board representation for $2.0 million and $1.0 million, respectively. The Convertible Notes were settled in March 2018 upon their automatic conversion into shares of the Company's Series B Preferred Stock.

A member of the Board is affiliated with Purdue. During the years ended December 31, 2018 and 2019, the Company continued to perform certain research and development activities pursuant to the Purdue License Agreement (Note 12).

During the years ended December 31, 2018 and 2019, related parties participated in each of the Company's offerings of the Preferred Stock (Note 9).

During the year ended December 31, 2018, the Company leased an office space from a significant shareholder. The Company moved out of the space in December 2018 and recognized $0.1 million of rent expense related to this lease during the year ended December 31, 2018.

16. Employee Benefit Plan

The Company did not have an employee benefit plan under Section 401(k) of the Internal Revenue Code during the year ended December 31, 2018. During the year ended December 31, 2019, the Company implemented a defined contribution savings plan for eligible employees. The plan covers substantially all employees who meet a minimum age requirement and allows participants to defer a portion of their annual compensation on a pre-tax basis. Under the plan, the Company is not obligated to match any participant contributions. The Company did not make any contributions to the plan during the year ended December 31, 2019.

PRAXIS PRECISION MEDICINES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Continued)

17. Subsequent Events

Series C Redeemable Convertible Preferred Stock Transactions

On January 20, 2020, the Company granted two investors holding 5,825,243 shares of Series C Preferred Stock that were purchased in December 2019 the option to put their shares back to the Company at the original issuance price. On February 19, 2020 and March 3, 2020, the investors exercised their put option in full via the execution of Stock Redemption and Release Agreements in order to effect the repurchase. Pursuant to the Stock Redemption and Release Agreements, the Company agreed to repurchase a total of 5,825,243 shares of Series C Preferred Stock at the original issuance price of $5.15 per share, for an aggregate cash repurchase price of $30.0 million. Under the terms of the Stock Redemption and Release Agreements, the investors waived their right to cumulative dividends that had accumulated from the original issuance date through the date of repurchase.

The Company determined that the additional put right that was granted to the investors represented a modification of the affected shares of Series C Preferred Stock, but that it did not result in incremental value to the shareholders. As there was no incremental value associated with the modification, there was no impact to the accounting for the Series C Preferred Stock. The Company also determined that the put right did not require bifurcation, as it does not contain the characteristics of a derivative instrument. Further, the Company determined that the shares of Series C Preferred Stock that were subject to repurchase did not become mandatorily redeemable until the execution of the Stock Redemption and Release Agreements because the parties did not have an unconditional legal obligation to complete the redemptions until the associated agreements were finalized. Such determination was made in consultation with legal counsel. Accordingly, the Company recorded each of the redemptions on the respective date of repurchase and recognized a gain on repurchase equal to the difference between the repurchase price and the carrying value of the preferred stock on the respective date of repurchase. The aggregate gain of $0.5 million will be recorded as an adjustment to accumulated deficit in the statement of redeemable convertible preferred stock and stockholders' (deficit) equity. The gain related exclusively to the dividends accrued on the repurchased shares, which were waived by the investors as part of the Stock Redemption and Release Agreements.

On April 15, 2020 and May 8, 2020, the Company completed additional closings for the sale and issuance of its Series C Preferred Stock for a total of 4,563,108 shares at $5.15 per share for aggregate cash proceeds of $23.5 million, less an immaterial amount of issuance costs.

Common Stock Authorized for Issuance

On June 5, 2020, the Board amended the Company's Amended and Restated Certificate of Incorporation to increase the number of shares of common stock authorized for issuance to 50,000,000 shares.

Amendment to 2017 Stock Incentive Plan

On June 5, 2020, the Board amended the 2017 Stock Incentive Plan to increase the total number of shares authorized for issuance to 8,366,813 shares.

Related Party Transactions

One of the founders of RogCon became the Company's General Counsel in June 2020. The Company continues to reimburse RogCon for its out-of-pocket costs incurred for activities performed under the License Agreement.

Shares

Common Stock

P R O S P E C T U S

Book-running Managers

Cowen **Evercore ISI** **Piper Sandler**

Lead Manager
Wedbush Pacgrow

Co-Manager
Blackstone Capital Markets

Until , all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This requirement is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

PART II

Information Not Required in Prospectus

Item 13. Other expenses of issuance and distribution.

	Amount to be Paid
SEC registration fee	$ *
FINRA filing fee	*
Nasdaq Global Market initial listing fee	*
Printing and mailing	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees and expenses	*
Blue Sky fees and expenses	*
Miscellaneous	*
Total	$ *

* To be filed by amendment.

Item 14. Indemnification of directors and officers.

Section 145 of the Delaware General Corporation Law (DGCL) authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys' fees) judgments, fines, and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys' fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our amended and restated certificate of incorporation and amended and restated bylaws to be in effect upon the closing of this offering that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies, such as an injunction or rescission.

In addition, our bylaws will provide that:

- we will indemnify our directors, officers and, at the discretion of our board of directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and
- we will advance reasonable expenses, including attorneys' fees, to our directors and, at the discretion of our board of directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We have entered into indemnification agreements with each of our directors and intend to enter into such agreements with certain of our executive officers. These agreements provide that we will indemnify each of our directors, certain of our executive officers and, at times, their affiliates to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees (but excluding judgments, fines and settlement amounts), to each indemnified director, executive officer or affiliate in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as a director or officer brought on behalf of us or in furtherance of our rights. Additionally, certain of our directors or officers may have certain rights to indemnification, advancement of expenses or insurance provided by their affiliates or other third parties, which indemnification relates to and might apply to the same proceedings arising out of such director's or officer's services as a director referenced herein. Nonetheless, we have agreed in the indemnification agreements that our obligations to those same directors or officers are primary and any obligation of such affiliates or other third parties to advance expenses or to provide indemnification for the expenses or liabilities incurred by those directors are secondary.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act.

In the underwriting agreement that we enter into in connection with the sale of shares of our common stock in this offering, a form of which will be filed as Exhibit 1.1 to this registration statement, there will be provisions for indemnification of us and our directors and officers by the underwriters against certain liabilities under the Securities Act and the Exchange Act.

Item 15. Recent sales of unregistered securities.

The following list sets forth information regarding all unregistered securities sold by us since January 1, 2017. No underwriters were involved in the sales and the certificates representing the securities sold and issued contain legends restricting transfer of the securities without registration under the Securities Act or an applicable exemption from registration.

(a) Preferred stock issuances

From April 2017 to July 2017, we issued and sold an aggregate of 4,060,000 shares of our Series A preferred stock at a per share purchase price of $1.00 for aggregate gross consideration of $7.1 million. From March 2018 to November 2019, we issued and sold an aggregate of 13,627,519 shares of our Series B preferred stock at a per share purchase price of $3.00 for aggregate gross consideration of $37.0 million

In March 2018, we issued an aggregate of 902,916 shares of our Series B preferred stock at a price per share of $2.25 pursuant to the conversion of a promissory note. In March 2018, we issued an

aggregate of 383,269 shares of our Series B preferred stock at a price per share of $2.625 pursuant to the conversion of a promissory note.

In June 2019, we issued and sold an aggregate of 2,666,666 shares of our Series B-1 preferred stock at a per share purchase price of $3.75 for aggregate gross consideration of $10.0 million.

From November 2019 to May 2020, we issued and sold an aggregate of 14,368,935 shares of our Series C preferred stock at a per share purchase price of $5.15 for aggregate gross consideration of $74.0 million. From February 2017 to March 2020, we repurchased 5,825,243 shares of our Series C preferred stock at the original issuance price of $5.15 per share for an aggregate cash repurchase price of $30.0 million.

(b) Option issuances

Since January 1, 2017, we have granted to employees, officers, directors, consultants and other service providers options to purchase an aggregate of 7,100,500 shares of our common stock, with exercise prices ranging from $0.05 to $2.61 per share, pursuant to the 2017 Stock Incentive Plan, or the 2017 Plan. Since January 1, 2017, 23,585 shares of common stock have been issued upon the exercise of stock options pursuant to the 2017 Plan.

(c) Restricted stock issuance

In May 2017, we issued and sold an aggregate of 225,000 restricted shares of our common stock at a price per share of $0.05 for aggregate gross consideration of $11,500.

We deemed the offers, sales, and issuances of the securities described above to be exempt from registration under the Securities Act, in reliance on Section 4(a)(2) of the Securities Act, including Regulation D and Rule 506 promulgated thereunder, regarding transactions by an issuer not involving a public offering. All purchasers of securities in transactions exempt from registration pursuant to Regulation D represented to us that they were accredited investors and were acquiring the shares for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof and that they could bear the risks of the investment and could hold the securities for an indefinite period of time. The purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration statement or an available exemption from such registration.

Item 16. Exhibits and financial statement schedules.

(a) Exhibits

The exhibits to the registration statement are listed in the Exhibit Index to this registration statement and are incorporated herein by reference.

(b) Financial Statement Schedules

All schedules have been omitted because they are not required or because the required information is given in the financial statements or notes to those statements.

Item 17. Undertakings.

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the underwriting agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore,

unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes:

(1) That for purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) That for the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

EXHIBIT INDEX

1.1*	Form of Underwriting Agreement
3.1*	Amended and Restated Certificate of Incorporation of the Registrant, as amended, as currently in effect
3.2*	Form of Amended and Restated Certificate of Incorporation of the Registrant (to be in effect upon completion of this offering)
3.3	Bylaws of the Registrant, as currently in effect
3.4*	Form of Amended and Restated Bylaws (to be in effect upon completion of this offering)
4.1*	Specimen Common Stock Certificate
5.1*	Opinion of Goodwin Procter LLP
10.1*	Form of Director Indemnification Agreement
10.2*	Form of Officer Indemnification Agreement
10.3#	Praxis Precision Medicines, Inc. 2017 Stock Incentive Plan, as amended, and form of award agreements thereunder
10.4#*	Form of 2020 Stock Option and Incentive Plan
10.5#*	Form of Incentive Stock Option Agreement under the Registrant's 2020 Stock Option and Incentive Plan
10.6#*	Form of Non-Qualified Stock Option Agreement for Company Employees under the Registrant's 2020 Stock Option and Incentive Plan
10.7#*	Form of Non-Qualified Stock Option Agreement for Non-Employee Directors under the Registrant's 2020 Stock Option and Incentive Plan
10.8#*	Form of Restricted Stock Award Agreement under the Registrant's 2020 Stock Option and Incentive Plan
10.9#*	Form of Restricted Stock Award Agreement for Company Employees under the Registrant's 2020 Stock Option and Incentive Plan
10.10#*	Form of Restricted Stock Award Agreement for Non-Employee Directors under the Registrant's 2020 Stock Option and Incentive Plan
10.11#*	2020 Employee Stock Purchase Plan
10.12#*	Senior Executive Cash Incentive Bonus Plan
10.13#*	Employment Agreement by and between Marcio Souza and the Registrant (to be entered into in connection with this offering)
10.14#*	Employment Agreement by and between Stuart Chaffee and the Registrant (to be entered into in connection with this offering)
10.15#*	Employment Agreement by and between Bernard Ravina and the Registrant (to be entered into in connection with this offering)
10.16†	License Agreement, dated December 31, 2017, by and between Purdue Neuroscience Company and the Registrant
10.17†	Cooperation and License Agreement, dated September 11, 2019, by and between RogCon Inc. and the Registrant
10.18†	Research Collaboration, Option and License Agreement, dated September 11, 2019, by and between Ionis Pharmaceuticals, Inc. and the Registrant

10.19*	Sublease, dated October 4, 2018, by and between Highland Capital Partners, LLC and the Registrant
10.20*	Consent to Sublease, First Amendment of Lease and Amendment, dated November 2, 2018, by and among Highland Capital Partners, LLC, MIT One Broadway, LLC and the Registrant
21.1	Subsidiaries of the Registrant
23.1*	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm
23.2*	Consent of Goodwin Procter LLP (included in Exhibit 5.1)
24.1	Power of Attorney (included on the signature page)

* To be included by amendment.
\# Indicates a management contract or any compensatory plan, contract or arrangement.
† Portions of this exhibit (indicated by asterisks) have been omitted in accordance with the rules of the Securities and Exchange Commission.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in Cambridge, Massachusetts, on the day of , 2020.

PRAXIS PRECISION MEDICINES, INC.

By: _____
Marcio Souza
Chief Executive Officer

POWER OF ATTORNEY AND SIGNATURES

Each individual whose signature appears below hereby constitutes and appoints each of Marcio Souza, Stuart Chaffee and Alex Nemiroff and as such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement (or any Registration Statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement and Power of Attorney has been signed by the following person in the capacities and on the date indicated.

Name	Title	Date
Marcio Souza	Chief Executive Officer and Director (Principal Executive Officer)	, 2020
Stuart Chaffee, Ph.D.	Chief Financial Officer (Principal Financial and Accounting Officer)	, 2020
Nicholas Galaktos, Ph.D.	Chairman of the Board	, 2020
Gregory Norden	Director	, 2020
Ari Brettman, M.D.	Director	, 2020

Name	Title	Date
Thomas Dyrberg, M.D.	Director	, 2020
Paul Medeiros	Director	, 2020
Kiran Reddy, M.D.	Director	, 2020
Stefan Vitorovic	Director	, 2020
William Young	Director	, 2020

Exhibit 3.3

BY-LAWS
OF
EpiPM THERAPEUTICS, INC.

TABLE OF CONTENTS

ARTICLE I

STOCKHOLDERS

1.1 Place of Meetings. All meetings of stockholders shall be held at such place as may be designated from time to time by the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President or, if not so designated, at the principal office of the corporation. The Board of Directors may, in its sole discretion, determine that a meeting shall not be held at any place, but may instead be held solely by means of remote communication in a manner consistent with the General Corporation Law of the State of Delaware.

1.2 Annual Meeting. The annual meeting of stockholders for the election of directors and for the transaction of such other business as may properly be brought before the meeting shall be held on a date and at a time designated by the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President (which date shall not be a legal holiday in the place where the meeting is to be held).

1.3 Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time by only the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President, and may not be called by any other person or persons. The Board of Directors may postpone or reschedule any previously scheduled special meeting of stockholders. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting.

1.4 Notice of Meetings. Except as otherwise provided by law, notice of each meeting of stockholders, whether annual or special, shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. Without limiting the manner by which notice otherwise may be given to stockholders, any notice shall be effective if given by a form of electronic transmission consented to (in a manner consistent with the General Corporation Law of the State of Delaware) by the stockholder to whom the notice is given. The notices of all meetings shall state the place, if any, date and time of the meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. If notice is given by mail, such notice shall be deemed given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. If notice is given by electronic transmission, such notice shall be deemed given at the time specified in Section 232 of the General Corporation Law of the State of Delaware.

1.5 Voting List. The Secretary shall prepare, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, for a period of at least 10 days prior to the meeting: (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during

ordinary business hours, at the principal place of business of the corporation. If the meeting is to be held at a physical location (and not solely by means of remote communication), then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. The list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

1.6 Quorum. Except as otherwise provided by law, the Certificate of Incorporation or these By-laws, the holders of a majority in voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at the meeting, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum for the transaction of business; provided, however, that where a separate vote by a class or classes or series of capital stock is required by law or the Certificate of Incorporation, the holders of a majority in voting power of the shares of such class or classes or series of the capital stock of the corporation issued and outstanding and entitled to vote on such matter, present in person, present by means of remote communication in a manner, if any, authorized by the Board of Directors in its sole discretion, or represented by proxy, shall constitute a quorum entitled to take action with respect to the vote on such matter. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

1.7 Adjournments. Any meeting of stockholders may be adjourned from time to time to any other time and to any other place at which a meeting of stockholders may be held under these By-laws by the chairman of the meeting or by the stockholders present or represented at the meeting and entitled to vote, although less than a quorum. It shall not be necessary to notify any stockholder of any adjournment of less than 30 days if the time and place, if any, of the adjourned meeting, and the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting, are announced at the meeting at which adjournment is taken, unless after the adjournment a new record date is fixed for the adjourned meeting. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting.

1.8 Voting and Proxies. Each stockholder shall have one vote for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by law or the Certificate of Incorporation. Each stockholder of record entitled to vote at a meeting of stockholders, or to express consent or dissent to corporate action without a meeting, may vote or express such consent or dissent in person (including by means of remote communications, if any, by which stockholders may be deemed to be present in person and vote at such meeting) or may authorize another person or persons to vote or act for such stockholder by a proxy executed or transmitted in a manner permitted by the General Corporation Law of the State of Delaware by the stockholder or such stockholder's authorized agent and delivered (including by electronic transmission) to the Secretary of the corporation. No such proxy shall be voted or acted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period.

1.9 Action at Meeting. When a quorum is present at any meeting, any matter other than the election of directors to be voted upon by the stockholders at such meeting shall be decided by the vote of the holders of shares of stock having a majority in voting power of the votes cast by the holders of all of the shares of stock present or represented at the meeting and voting affirmatively or negatively on such matter (or if there are two or more classes or series of stock entitled to vote as separate classes, then in the case of each such class or series, the holders of a majority in voting power of the shares of stock of that class or series present or represented at the meeting and voting affirmatively or negatively on such matter), except when a different vote is required by law, the Certificate of Incorporation or these By-laws. When a quorum is present at any meeting, any election by stockholders of directors shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

1.10 Conduct of Meetings.

(a) Chairman of Meeting. Meetings of stockholders shall be presided over by the Chairman of the Board, if any, or in the Chairman's absence by the Vice Chairman of the Board, if any, or in the Vice Chairman's absence by the Chief Executive Officer, or in the Chief Executive Officer's absence, by the President, or in the President's absence by a Vice President, or in the absence of all of the foregoing persons by a chairman designated by the Board of Directors, or in the absence of such designation by a chairman chosen by vote of the stockholders at the meeting. The Secretary shall act as secretary of the meeting, but in the Secretary's absence the chairman of the meeting may appoint any person to act as secretary of the meeting.

(b) Rules, Regulations and Procedures. The Board of Directors may adopt by resolution such rules, regulations and procedures for the conduct of any meeting of stockholders of the corporation as it shall deem appropriate including, without limitation, such guidelines and procedures as it may deem appropriate regarding the participation by means of remote communication of stockholders and proxyholders not physically present at a meeting. Except to the extent inconsistent with such rules, regulations and procedures as adopted by the Board of Directors, the chairman of any meeting of stockholders shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders of record of the corporation, their duly authorized and constituted proxies or such other persons as shall be determined; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

1.11 Action without Meeting.

(a) Taking of Action by Consent. Any action required or permitted to be taken at any annual or special meeting of stockholders of the corporation may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote on such action were present and voted. Except as otherwise provided by the Certificate of Incorporation, stockholders may act by written consent to elect directors; provided, however, that, if such consent is less than unanimous, such action by written consent may be in lieu of holding an annual meeting only if all of the directorships to which directors could be elected at an annual meeting held at the effective time of such action are vacant and are filled by such action.

(b) Electronic Transmission of Consents. A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxyholder, or by a person or persons authorized to act for a stockholder or proxyholder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the corporation can determine (i) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxyholder or by a person or persons authorized to act for the stockholder or proxyholder and (ii) the date on which such stockholder or proxyholder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by telegram, cablegram or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by telegram, cablegram or other electronic transmission may be otherwise delivered to the principal place of business of the corporation or to an officer or agent of the corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the Board of Directors. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

(c) Notice of Taking of Corporate Action. Prompt notice of the taking of corporate action without a meeting by less than unanimous written consent shall be given to those stockholders who have not consented in writing and who, if the action had been taken at a meeting, would have been entitled to notice of the meeting if the record date for such meeting had been the date that written consents signed by a sufficient number of holders to take the action were delivered to the corporation.

ARTICLE II

DIRECTORS

2.1 General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation except as otherwise provided by law or the Certificate of Incorporation.

2.2 Number, Election and Qualification. Subject to the rights of holders of any series of Preferred Stock to elect directors, the number of directors of the corporation shall be established from time to time by the stockholders or the Board of Directors. The directors shall be elected at the annual meeting of stockholders by such stockholders as have the right to vote on such election. Election of directors need not be by written ballot. Directors need not be stockholders of the corporation.

2.3 Chairman of the Board; Vice Chairman of the Board. The Board of Directors may appoint from its members a Chairman of the Board and a Vice Chairman of the Board, neither of whom need be an employee or officer of the corporation. If the Board of Directors appoints a Chairman of the Board, such Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors and, if the Chairman of the Board is also designated as the corporation's Chief Executive Officer, shall have the powers and duties of the Chief Executive Officer prescribed in Section 3.7 of these By-laws. If the Board of Directors appoints a Vice Chairman of the Board, such Vice Chairman shall perform such duties and possess such powers as are assigned by the Board of Directors. Unless otherwise provided by the Board of Directors, the Chairman of the Board or, in the Chairman's absence, the Vice Chairman of the Board, if any, shall preside at all meetings of the Board of Directors.

2.4 Tenure. Each director shall hold office until the next annual meeting of stockholders and until a successor is elected and qualified, or until such director's earlier death, resignation or removal.

2.5 Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors fixed pursuant to Section 2.2 of these By-laws shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

2.6 Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting of the Board of Directors duly held at which a quorum is present shall be regarded as the act of the Board of Directors, unless a greater number is required by law or by the Certificate of Incorporation.

2.7 Removal. Except as otherwise provided by the General Corporation Law of the State of Delaware, any one or more or all of the directors of the corporation may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors, except that the directors elected by the holders of a particular class or series of stock may be removed without cause only by vote of the holders of a majority of the outstanding shares of such class or series.

2.8 Vacancies. Subject to the rights of holders of any series of Preferred Stock to elect directors, unless and until filled by the stockholders, any vacancy or newly-created directorship on the Board of Directors, however occurring, may be filled by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A director elected to fill a vacancy shall be elected for the unexpired term of such director's predecessor in office, and a director chosen to fill a position resulting from a newly-created directorship shall hold office until the next annual meeting of stockholders and until a successor is elected and qualified, or until such director's earlier death, resignation or removal.

2.9 Resignation. Any director may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal office or to the Chairman of the Board, the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon delivery unless it is specified to be effective at some later time or upon the happening of some later event.

2.10 Regular Meetings. Regular meetings of the Board of Directors may be held without notice at such time and place as shall be determined from time to time by the Board of Directors; provided that any director who is absent when such a determination is made shall be given notice of the determination. A regular meeting of the Board of Directors may be held without notice immediately after and at the same place as the annual meeting of stockholders.

2.11 Special Meetings. Special meetings of the Board of Directors may be held at any time and place designated in a call by the Chairman of the Board, the Chief Executive Officer, the President, two or more directors, or by one director in the event that there is only a single director in office.

2.12 Notice of Special Meetings. Notice of the date, place, if any, and time of any special meeting of directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (a) in person or by telephone at least 24 hours in advance of the meeting, (b) by sending written notice by reputable overnight courier, telecopy, facsimile or electronic transmission, or delivering written notice by hand, to such director's last known business, home or electronic transmission address at least 48 hours in advance of the meeting, or (c) by sending written notice by first-class mail to such director's last known business or home address at least 72 hours in advance of the meeting. A notice or waiver of notice of a meeting of the Board of Directors need not specify the purposes of the meeting.

2.13 Meetings by Conference Communications Equipment. Directors may participate in meetings of the Board of Directors or any committee thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.14 Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent to the action in writing or by electronic transmission, and the written consents or electronic transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

2.15 Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation with such lawfully delegable powers and duties as the Board of Directors thereby confers, to serve at the pleasure of the Board of Directors. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members of the committee present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board of Directors and subject to the provisions of law, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation and may authorize the seal of the corporation to be affixed to all papers which may require it. Each such committee shall keep minutes and make such reports as the Board of Directors may from time to time request. Except as the Board of Directors may otherwise determine, any committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided in these By-laws for the Board of Directors. Except as otherwise provided in the Certificate of Incorporation, these By-laws, or the resolution of the Board of Directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

2.16 Compensation of Directors. Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board of Directors may from time to time determine. No such payment shall preclude any director from serving the corporation or any of its parent or subsidiary entities in any other capacity and receiving compensation for such service.

ARTICLE III

OFFICERS

3.1 Titles. The officers of the corporation shall consist of a Chief Executive Officer, a President, a Secretary, a Treasurer and such other officers with such other titles as the Board of Directors shall determine, including one or more Vice Presidents, Assistant Treasurers and Assistant Secretaries. The Board of Directors may appoint such other officers as it may deem appropriate.

3.2 Election. The Chief Executive Officer, President, Treasurer and Secretary shall be elected annually by the Board of Directors at its first meeting following the annual meeting of stockholders. Other officers may be appointed by the Board of Directors at such meeting or at any other meeting.

3.3 Qualification. No officer need be a stockholder. Any two or more offices may be held by the same person.

3.4 Tenure. Except as otherwise provided by law, by the Certificate of Incorporation or by these By-laws, each officer shall hold office until such officer's successor is elected and qualified, unless a different term is specified in the resolution electing or appointing such officer, or until such officer's earlier death, resignation or removal.

3.5 Resignation and Removal. Any officer may resign by delivering a written resignation to the corporation at its principal office or to the Chief Executive Officer, the President or the Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some later time or upon the happening of some later event. Any officer may be removed at any time, with or without cause, by vote of a majority of the directors then in office. Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following such officer's resignation or removal, or any right to damages on account of such removal, whether such officer's compensation be by the month or by the year or otherwise, unless such compensation is expressly provided for in a duly authorized written agreement with the corporation.

3.6 Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any offices other than those of Chief Executive Officer, President, Treasurer and Secretary. Each such successor shall hold office for the unexpired term of such officer's predecessor and until a successor is elected and qualified, or until such officer's earlier death, resignation or removal.

3.7 President; Chief Executive Officer. Unless the Board of Directors has designated another person as the corporation's Chief Executive Officer, the President shall be the Chief Executive Officer of the corporation. The Chief Executive Officer shall have general charge and supervision of the business of the corporation subject to the direction of the Board of Directors, and shall perform all duties and have all powers that are commonly incident to the office of chief executive or that are delegated to such officer by the Board of Directors. The President shall perform such other duties and shall have such other powers as the Board of Directors or the Chief Executive Officer (if the President is not the Chief Executive Officer) may from time to time prescribe. In the event of the absence, inability or refusal to act of the Chief Executive Officer or the President (if the President is not the Chief Executive Officer), the Vice President (or if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the Chief Executive Officer and when so performing such duties shall have all the powers of and be subject to all the restrictions upon the Chief Executive Officer.

3.8 Vice Presidents. Each Vice President shall perform such duties and possess such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

3.9 Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall have such powers as the Board of Directors or the Chief Executive Officer may from time to time prescribe. In addition, the Secretary shall perform such duties and have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and special meetings of the Board of Directors, to attend all meetings of stockholders and the Board of Directors and keep a record of the proceedings, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or directors, the chairman of the meeting shall designate a temporary secretary to keep a record of the meeting.

3.10 Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned by the Board of Directors or the Chief Executive Officer. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the corporation, to deposit funds of the corporation in depositories selected in accordance with these By-laws, to disburse such funds as ordered by the Board of Directors, to make proper accounts of such funds, and to render as required by the Board of Directors statements of all such transactions and of the financial condition of the corporation.

The Assistant Treasurers shall perform such duties and possess such powers as the Board of Directors, the Chief Executive Officer or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

3.11 Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

3.12 Delegation of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

ARTICLE IV

CAPITAL STOCK

4.1 Issuance of Stock. Subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the corporation or the whole or any part of any shares of the authorized capital stock of the corporation held in the corporation's treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board of Directors in such manner, for such lawful consideration and on such terms as the Board of Directors may determine.

4.2 Stock Certificates; Uncertificated Shares. The shares of the corporation shall be represented by certificates, provided that the Board of Directors may provide by resolution or resolutions that some or all of any or all classes or series of the corporation's stock shall be uncertificated shares. Every holder of stock of the corporation represented by certificates shall be entitled to have a certificate, in such form as may be prescribed by law and by the Board of Directors, representing the number of shares held by such holder registered in certificate form. Each such certificate shall be signed in a manner that complies with Section 158 of the General Corporation Law of the State of Delaware.

Each certificate for shares of stock which are subject to any restriction on transfer pursuant to the Certificate of Incorporation, these By-laws, applicable securities laws or any agreement among any number of stockholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of each certificate representing shares of such class or series of stock, provided that in lieu of the foregoing requirements there may be set forth on the face or back of each certificate representing shares of such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests a copy of the full text of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

Within a reasonable time after the issuance or transfer of uncertificated shares, the corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to Sections 151, 202(a) or 218(a) of the General Corporation Law of the State of Delaware or, with respect to Section 151 of General Corporation Law of the State of Delaware, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

4.3 Transfers. Shares of stock of the corporation shall be transferable in the manner prescribed by law and in these By-laws. Transfers of shares of stock of the corporation shall be made only on the books of the corporation or by transfer agents designated to transfer shares of stock of the corporation. Subject to applicable law, shares of stock represented by certificates shall be transferred only on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, by the Certificate of Incorporation or by these By-laws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the corporation in accordance with the requirements of these By-laws.

4.4 Lost, Stolen or Destroyed Certificates. The corporation may issue a new certificate of stock in place of any previously issued certificate alleged to have been lost, stolen or destroyed, upon such terms and conditions as the Board of Directors may prescribe, including the presentation of reasonable evidence of such loss, theft or destruction and the giving of such indemnity and posting of such bond as the Board of Directors may require for the protection of the corporation or any transfer agent or registrar.

4.5 Record Date. The Board of Directors may fix in advance a date as a record date for the determination of the stockholders entitled to notice of or to vote at any meeting of stockholders or to express consent (or dissent) to corporate action without a meeting, or entitled to receive payment of any dividend or other distribution or allotment of any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action. Such record date shall not precede the date on which the resolution fixing the record date is adopted, and such record date shall not be more than 60 nor less than 10 days before the date of such meeting, nor more than 10 days after the date of adoption of a record date for a consent without a meeting, nor more than 60 days prior to any other action to which such record date relates.

If no record date is fixed, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day before the day on which notice is given, or, if notice is waived, at the close of business on the day before the day on which the meeting is held. If no record date is fixed, the record date for determining stockholders entitled to express consent to corporate action without a meeting, when no prior action by the Board of Directors is necessary, shall be the day on which the first consent is properly delivered to the corporation. If no record date is fixed, the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such purpose.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

4.6 Regulations. The issue, transfer, conversion and registration of shares of stock of the corporation shall be governed by such other regulations as the Board of Directors may establish.

ARTICLE V

GENERAL PROVISIONS

5.1 Fiscal Year. Except as from time to time otherwise designated by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January of each year and end on the last day of December in each year.

5.2 Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors.

5.3 Waiver of Notice. Whenever notice is required to be given by law, by the Certificate of Incorporation or by these By-laws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before, at or after the time of the event for which notice is to be given, shall be deemed equivalent to notice required to be given to such person. Neither the business nor the purpose of any meeting need be specified in any such waiver. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

5.4 Voting of Securities. Except as the Board of Directors may otherwise designate, the Chief Executive Officer, the President or the Treasurer may waive notice of, vote, or appoint any person or persons to vote, on behalf of the corporation at, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at, any meeting of stockholders or securityholders of any other entity, the securities of which may be held by this corporation.

5.5 Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary Secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

5.6 Certificate of Incorporation. All references in these By-laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and in effect from time to time.

5.7 Severability. Any determination that any provision of these By-laws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these By-laws.

5.8 Pronouns. All pronouns used in these By-laws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

ARTICLE VI

AMENDMENTS

6.1 By the Board of Directors. These By-laws may be altered, amended or repealed, in whole or in part, or new by-laws may be adopted by the Board of Directors.

6.2 By the Stockholders. These By-laws may be altered, amended or repealed, in whole or in part, or new by-laws may be adopted by the affirmative vote of the holders of a majority of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at any annual meeting of stockholders, or at any special meeting of stockholders, provided notice of such alteration, amendment, repeal or adoption of new by-laws shall have been stated in the notice of such special meeting.

CERTIFICATE OF AMENDMENT
OF BYLAWS OF
PRAXIS PRECISION MEDICINES, INC.

The undersigned, in his capacity as Secretary of Praxis Precision Medicines, Inc., a Delaware corporation (the "Company"), hereby certifies that the below Section 4.7 was added to the Bylaws of the Company via an amendment pursuant to ARTICLE VI thereof and the Certificate of Incorporation of the Company, adopted by the Company's Board of Directors, effective December 10, 2019, and by written consent of the stockholders of the Company, effective December 10, 2019:

"Section 4.7 Restrictions on Transfer.

(a) No holder of any of the shares of stock of the corporation may sell, transfer, assign, pledge, or otherwise dispose of or encumber any of the shares of stock of the corporation or any right or interest therein, whether voluntarily or by operation of law, or by gift or otherwise (including by way of any arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such stock) (each, a "Transfer") without the prior written consent of the corporation, upon duly authorized action of its Board of Directors. The corporation may withhold consent for any legitimate corporate purpose, as determined by the Board of Directors. Examples of the basis for the corporation to withhold its consent include, without limitation, (i) if such Transfer to individuals, companies or any other form of entity identified by the corporation as a potential competitor or considered by the corporation to be unfriendly; or (ii) if such Transfer increases the risk of the corporation having a class of security held of record by 2,000 or more persons, or 500 or more persons who are not accredited investors (as such term is defined by the SEC), as described in Section 12(g) of the Securities Exchange Act of 1934 (the "***1934 Act***") and any related regulations, or otherwise requiring the corporation to register any class of securities under the 1934 Act; or (iii) if such Transfer would result in the loss of any federal or state securities law exemption relied upon by the corporation in connection with the initial issuance of such shares or the issuance of any other securities; or (iv) if such Transfer is facilitated in any manner by any public posting, message board, trading portal, internet site, or similar method of communication, including without limitation any trading portal or internet site intended to facilitate secondary transfers of securities; or (v) if such Transfer is to be effected in a brokered transaction; or (vi) if such Transfer represents a Transfer of less than all of the shares then held by the stockholder and its affiliates or is to be made to more than a single transferee.

(b) If a stockholder desires to Transfer any shares, then the stockholder will first give written notice to the corporation. The notice must name the proposed transferee and state the number of shares to be transferred, the proposed consideration, and all other terms and conditions of the proposed transfer.

(c) At the option of the corporation, the stockholder will be obligated to pay to the corporation a reasonable transfer fee related to the costs and time of the corporation and its legal and other advisors related to any proposed Transfer.

(d) Any Transfer, or purported Transfer, of shares not made in strict compliance with this Section will be null and void, will not be recorded on the books of the corporation and will not be recognized by the corporation. Transfers of record of shares of stock of the corporation will be made only upon its books by the holders thereof, in person or by attorney duly authorized, and, in the case of stock represented by certificate, upon the surrender of a properly endorsed certificate or certificates for a like number of shares.

(e) The restriction on Transfer set forth in Section 4.7(a) will not apply to the Transfer of shares of Preferred Stock or to the Transfer of any shares of Common Stock issued upon the conversion of any shares of Preferred Stock.

(f) The restriction on Transfer set forth in Section 4.7(a) will terminate upon the date securities of the corporation are first offered to the public pursuant to a registration statement filed with, and declared effective by, the SEC under the Securities Act of 1933, as amended (the "***1933 Act***").

(g) The certificates representing shares of Common Stock of the corporation (other than Common Stock issued upon the conversion of Preferred Stock) will bear on their face the following legend so long as the foregoing Transfer restrictions are in effect:

> "THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A TRANSFER RESTRICTION, AS PROVIDED IN THE BYLAWS OF THE CORPORATION."

(h) Anything to the contrary contained herein notwithstanding, the following transactions shall be exempt from the provisions of this bylaw:

(1) An individual stockholder's gift of any or all of his or her capital stock either during such stockholder's lifetime or on death to such stockholder's immediate family or a trust that is primarily for the benefit of such stockholder and/or his or her immediate family. "Immediate family" as used herein shall mean spouse, lineal descendent, parent, or sibling (including half siblings) of the stockholder making such transfer. A trust shall be considered to be primarily for the benefit of such stockholder and/or his or her immediate family only if the beneficial interest of any other person is so remote as to be negligible.

(2) A Transfer pursuant to a stockholder's beneficiary designation, will or the laws of intestate succession.

(3) In any such case, the transferee, assignee, or other recipient shall receive and hold such stock subject to the provisions of this bylaw, and there shall be no further transfer of such stock except in accord with this bylaw."

PRAXIS PRECISION MEDICINES, INC.

Dated: December 10, 2019

/s/ Kiran Reddy
Kiran Reddy, Secretary

[Signature Page to Amendment to Bylaws]

Exhibit 10.3

PRAXIS PRECISION MEDICINES, INC.

2017 STOCK INCENTIVE PLAN

1. Purpose

The purpose of this 2017 Stock Incentive Plan (the "Plan") of Praxis Precision Medicines, Inc., a Delaware corporation (the "Company"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align the interests of such persons with those of the Company's stockholders. Except where the context otherwise requires, the term "Company" shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the "Board").

2. Eligibility

All of the Company's employees, officers, directors, consultants and advisors are eligible to be granted options, restricted stock, restricted stock units ("RSUs") and other stock-based awards (each, an "Award") under the Plan. Each person who receives an Award under the Plan is deemed a "Participant".

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any A ward agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient to carry the Plan into effect and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award. No director or person acting pursuant to the authority delegated by the Board shall be liable for any action or determination relating to or under the Plan made in good faith.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a "Committee"). All references in the Plan to the "Board" shall mean the Board or a Committee of the Board or the officers referred to in Section 3(c) to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or officers. The Board may abolish any Committee at any time and re-vest in itself any previously delegated authority.

(c) Delegation to Officers. To the extent permitted by applicable law, the Board may delegate to one or more officers of the Company the power to grant Awards (subject to any limitations under the Plan) to employees or officers of the Company or any of its present or future subsidiary corporations and to exercise such other powers under the Plan as the Board may determine, *provided* that the Board shall fix the terms of the Awards to be granted by such officers (including the exercise price of such Awards, which may include a formula by which the exercise price will be determined) and the maximum number of shares subject to Awards that the officers may grant; *provided further, however*, that no officer shall be authorized to grant Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) or to any "officer" of the Company (as defined by Rule 16a-1 under the Exchange Act). The Board may rescind any such delegation at any time and re-vest in itself any previously delegated authority.

4. Stock Available for Awards.

(a) Number of Shares. Subject to adjustment under Section 8 hereof, Awards may be made under the Plan covering up to five hundred twenty-five thousand (525,000) shares of common stock of the Company (the "Common Stock"). If any Award expires, lapses, or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at or below the original issuance price), in any case in a manner that results in any shares of Common Stock covered by such Award not being issued or being so reacquired by the Company, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan. Further, shares of Common Stock delivered (whether by actual delivery or attestation) or tendered to the Company by a Participant to satisfy the applicable exercise or purchase price of an Award and/or to satisfy any applicable tax withholding obligation (including shares retained by the Company from the Award being exercised or purchased and/or creating the tax obligation) shall be added to the number of shares of Common Stock available for the grant of Awards under the Plan. However, in the case of Incentive Stock Options (as hereinafter defined), the foregoing provisions shall be subject to any limitations under the Code. Shares of Common Stock issued under the Plan may consist in whole or in part of authorized but unissued shares, shares purchased on the open market, or treasury shares. At no time while there is any Option (as defined below) outstanding and held by a Participant who was a resident of the State of California on the date of grant of such Option, shall the total number of shares of Common Stock issuable upon exercise of all outstanding options and the total number of shares provided for under any stock bonus or similar plan or agreement of the Company exceed the applicable percentage as calculated in accordance with the conditions and exclusions of Section 260.140.45 of the California Code of Regulations (the "California Regulations"), based on the shares of the Company which are outstanding at the time the calculation is made.

(b) Substitute Awards. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock-based awards granted prior to such merger or consolidation by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a) hereof, except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "Option") and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable. An Option that is not intended to be an Incentive Stock Option (as hereinafter defined) shall be designated a "Nonstatutory Stock Option".

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "Incentive Stock Option") shall only be granted to employees of the Company, any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code. All Options intended to qualify as Incentive Stock Options shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code, and without limiting generality of the foregoing, such Options shall be deemed to include terms that comply with the eligibility standards described section 422(b) of the Code. Subject to the remaining provisions of this Section 5(b), if an Option intended to qualify as an Incentive Stock Option does not so qualify, the Board may, at its discretion, amend the Plan and Award with respect to such Option so that such Option qualifies as an Incentive Stock Option. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Participant during any calendar year (under all plans of the Company and any affiliates) exceeds $100,000 (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with the rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Award. Neither the Company nor the Board shall have any liability to a Participant, or any other party, (i) if an Option (or any part thereof) which is intended to qualify as an Incentive Stock Option fails to qualify as such or (ii) for any action or omission by the Company or Board that causes an Option not to qualify as an Incentive Stock Option, including without limitation the conversion of an Incentive Stock Option to a Nonstatutory Stock Option or the grant of an Option intended as an Incentive Stock Option that fails to satisfy the requirements under the Code applicable to an Incentive Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify the exercise price in the applicable option agreement. The exercise price shall be not less than 100% of the Fair Market Value on the date the Option is granted. In the case of an Incentive Stock Option granted to an employee who, at the time of grant of the Option, owns (or is treated as owning under Section 424 of the Code) stock representing more than 10% of the voting power of all classes of stock of the Company (or a "parent corporation" or "subsidiary corporation" thereof within the meaning of Sections 424(e) or 424(f) of the Code, respectively), the per share exercise price shall be no less than 110% of the Fair Market Value on the date the Option is granted.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement, *provided* that the term of any Option shall not exceed ten years. In the case of an Incentive Stock Option granted to an employee who, at the time of grant of the Option, owns (or is treated as owning under Section 424 of the Code) stock representing more than 10% of the voting power of all classes of stock of the Company (or a "parent corporation" or "subsidiary corporation" thereof within the meaning of Sections 424(e) or 424(f) of the Code, respectively), the term of the Option shall not exceed five years.

(e) Exercise of Option; Notification of Disposition. Options may be exercised by delivery to the Company of a written notice of exercise signed by the proper person or by any other form of notice (including electronic notice) approved by the Board together with payment in full as specified in Section 5(f) for the number of shares for which the Option is exercised. Unless otherwise determined by the Board, an Option may not be exercised for a fraction of a share of Common Stock. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise. If an Option is designated as an Incentive Stock Option, the Participant shall give prompt notice to the Company of any disposition or other transfer of any shares of Common Stock acquired from the Option if such disposition or transfer is made (i) within two years from the grant date with respect to such Option or (ii) within one year after the transfer of such shares to the Participant (other than any such disposition made in connection with a Reorganization Event). Such notice shall specify the date of such disposition or other transfer and the amount realized, in cash, other property, assumption of indebtedness or other consideration, by the Participant in such disposition or other transfer.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) when the Common Stock is registered under the Exchange Act, except as may otherwise be provided in the applicable option agreement, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker acceptable to the Company to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker acceptable to the Company to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) when the Common Stock is registered under the Exchange Act and to the extent provided for in the applicable option agreement or approved by the Board, in its sole discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their fair market value as determined by (or in a manner approved by) the Board ("Fair Market Value"), *provided* (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent permitted by applicable law and provided for in the applicable option agreement or approved by the Board, in its sole discretion, by (i) delivery of a promissory note of the Participant to the Company on terms determined by the Board, or (ii) payment of such other lawful consideration as the Board may determine; or

(5) by any combination of the above permitted forms of payment.

(g) Early Exercise of Options. The Board may provide in the terms of an option agreement that the Participant may exercise an Option in whole or in part prior to the full vesting of the Option in exchange for unvested shares of Restricted Stock (as defined below) with respect to any unvested portion of the Option so exercised. Shares of Restricted Stock acquired upon the exercise of any unvested portion of an Option shall be subject to such terms and conditions as the Board shall determine.

6. Restricted Stock; Restricted Stock Units

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock ("Restricted Stock"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. Instead of granting Awards for Restricted Stock, the Board may grant Awards entitling the recipient to receive shares of Common Stock or cash to be delivered at the time such Award vests ("Restricted Stock Units") (Restricted Stock and Restricted Stock Units are each referred to herein as a "Restricted Stock Award").

(b) Terms and Conditions for All Restricted Stock Awards. The Board shall determine and set forth in the applicable award agreement the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, if any.

(c) Additional Provisions Relating to Restricted Stock.

(1) Dividends. Participants holding shares of Restricted Stock will be entitled to all ordinary cash dividends paid with respect to such shares to the extent such dividends have a record date that is on or after the date on which the Participant to whom such Restricted Stock is granted becomes the record holder of such Restricted Stock, unless otherwise provided by the Board. Unless otherwise provided by the Board, if any dividends or distributions are paid in shares, or consist of a dividend or distribution to holders of Common Stock other than an ordinary cash dividend, the shares or other property will be subject to the same restrictions on transferability and forfeitability as the shares of Restricted Stock with respect to which they were paid. Each dividend payment will be made as provided in the applicable award agreement, but no later than the end of the calendar year in which the dividends are paid to shareholders of that class of stock or, if later, the 15th day of the third month following the later of (A) the date the dividends are paid to shareholders of that class of stock and (B) the date the dividends are no longer subject to forfeiture.

(2) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death (the "Designated Beneficiary"). In the absence of an effective designation by a Participant, "Designated Beneficiary" shall mean the Participant's estate.

(d) Additional Provisions Relating to Restricted Stock Units.

(1) Settlement. Upon the vesting of a Restricted Stock Unit, the Participant shall be entitled to receive from the Company one share of Common Stock or an amount of cash or other property equal to the Fair Market Value of one share of Common Stock on the settlement date, as the Board shall determine and as provided in the applicable award agreement. The Board may provide that settlement of Restricted Stock Units shall occur upon or as soon as reasonably practicable after the vesting of the Restricted Stock Units or shall instead be deferred, on a mandatory basis or at the election of the Participant, in a manner that complies with Section 409A of the Code.

(2) Voting Rights. A Participant shall have no voting rights with respect to any Restricted Stock Units unless and until shares are delivered in settlement thereof.

(3) Dividend Equivalents. To the extent provided by the Board, a grant of Restricted Stock Units may provide a Participant with the right to receive Dividend Equivalents. Dividend Equivalents may be paid currently or credited to an account for the Participant, may be settled in cash and/or shares of Common Stock and may be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which the Dividend Equivalents are paid, as determined by the Board, subject, in each case, to such terms and conditions as the Board shall establish and set forth in the applicable award agreement. "Dividend Equivalents" means a right granted to a Participant to receive the equivalent value (in cash or shares of Common Stock) of dividends paid on shares of Common Stock.

7. Other Stock-Based Awards

Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants ("Other Stock-Based Awards"), including without limitation stock appreciation rights ("SARs") and Awards entitling recipients to receive shares of Common Stock to be delivered in the future. Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based

Awards may be paid in shares of Common Stock or cash, as the Board shall determine. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award, including any purchase price, transfer restrictions, vesting conditions and other terms and conditions applicable thereto.

8. Adjustments for Changes in Common Stock and Certain Other Events

(a) In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the number and class of securities and exercise price per share of each outstanding Option, (iii) the number of shares subject to and the repurchase price per share subject to each outstanding Restricted Stock Award, and (iv) the terms of each other outstanding Award shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board; *provided* that, unless otherwise determined by the Board, such changes to the Options shall comply with section 1.424-1 of the Treasury Regulations. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events.

(1) Definition. A "Reorganization Event" means the consummation of: (i) the dissolution or liquidation of the Company, (ii) the sale of all or substantially all of the assets of the Company on a consolidated basis to an unrelated person or entity, (iii) a merger, reorganization or consolidation pursuant to which the holders of the Company's outstanding voting power immediately prior to such transaction do not own a majority of the outstanding voting power of the surviving or resulting entity (or its ultimate parent, if applicable), (iv) the acquisition of all or a majority of the outstanding voting stock of the Company in a single transaction or a series of a related transactions by a person or group of persons, or (v) any other acquisition of the business of the Company, as determined by the Board; *provided, however*, that the first firm commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale by the Company of its equity securities, as a result of or following which the Common Stock shall be public, any subsequent public offering or another capital raising event, or a merger effected solely to change the Company's domicile shall not constitute a "Reorganization Event."

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock Awards. In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock Awards on such terms as the Board determines: (i) provide that Awards shall

be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof); provided that, unless otherwise determined by the Board, such assumption or substitution of the Options shall comply with section 1.424-1 of the Treasury Regulations, (ii) upon written notice to a Participant, provide that the Participant's unexercised Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "Acquisition Price"), make or provide for a cash payment to a Participant equal to the excess, if any, of (A) the Acquisition Price times the number of shares of Common Stock subject to the Participant's Awards (to the extent the exercise price does not exceed the Acquisition Price) over (B) the aggregate exercise price of all such outstanding Awards and any applicable tax withholdings, in exchange for the termination of such Awards, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 8(b), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

For purposes of clause (i) above, an Option shall be considered assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); *provided, however*, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of common stock of the acquiring or succeeding corporation (or an affiliate thereof) equivalent in value (as determined by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock Awards. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company under each outstanding Restricted Stock Award shall inure to the benefit of the Company's successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to the Common Stock subject to such Restricted Stock Award. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock Award or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock A wards then outstanding shall automatically be deemed terminated or satisfied.

9. General Provisions Applicable to Awards

(a) Transferability of Awards. Except as the Board may otherwise determine or provide in an Award, Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, retirement, termination or other cessation of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. The Company shall not be obligated to deliver certificates, release from forfeiture, otherwise recognize a Participant's unrestricted ownership in an Award or the cash or property proceeds therefrom, until the Company satisfies all applicable federal, state, and local or other income and employment tax withholding obligations. In its sole discretion, the Company may satisfy such withholding obligations by any of the following means or by a combination of such means: (i) causing the Participant to tender to the Company cash payment; (ii) withholding cash from an Award settled in cash; (iii) withholding from amounts otherwise payable by the Company to the Participant, including but not limited to additional withholding on the Participant's salary or wages, or from proceeds from the sale of Common Stock issued pursuant to an Award; (iv) delivery of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value; *provided, however*, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income), and *provided, further*, shares surrendered to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements; or (v) by such other method as determined by the Board.

(f) Amendment of Award.

(1) The Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or settlement, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, would not materially and adversely affect the Participant's rights under the Plan, (ii) the change is permitted under Section 8 hereof, or (iii) the change is to ensure that an Option intended to qualify as an Incentive Stock Option qualifies as such.

(2) The Board may, without stockholder approval, amend any outstanding Award granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Award. The Board may also, without stockholder approval, cancel any outstanding award (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled award.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations. The inability of the Company to obtain authority from any regulatory body having jurisdiction, which authority is determined by the Board to be necessary to the lawful issuance and sale of any securities hereunder, shall relieve the Company of any liability in respect of the failure to issue or sell such shares at to which such requisite authority shall not have been obtained.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be.

10. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares. Notwithstanding any other provision of the Plan, unless otherwise determined by the Board or required by any applicable laws, the Company shall not be required to deliver to any Participant certificates evidencing shares of Common Stock issued in connection with any Award and instead such shares of Common Stock may be recorded in the books of the Company (or, as applicable, its transfer agent or stock plan administrator). The Company may place legends on any stock certificates issued under the Plan deemed necessary or appropriate by the Board in order to comply with applicable laws.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date on which it is adopted by the Board. No Awards shall be granted under the Plan after the expiration of 10 years from the earlier of (i) the date on which the Plan was adopted by the Board or (ii) the date the Plan was approved by the Company's stockholders, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time; *provided* that if at any time the approval of a Company stockholder is required as to any modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without the consent of the affected Participant. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 10(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment does not materially and adversely affect the rights of Participants under the Plan.

(e) Authorization of Sub-Plans. The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable blue sky, securities or tax laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to this Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with Code Section 409A. Unless otherwise expressly provided for in an Award, the Plan and Award will be interpreted to the greatest extent possible in a manner that makes the Plan and the Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. If the Board determines that any Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and to the extent an Award is silent on terms necessary for compliance, such terms as deemed necessary by the Board in its sole discretion are hereby incorporated by reference into the Award. Without limiting the

generality of the foregoing, if shares of Common Stock are publicly traded, and if a Participant holding an Award that constitutes "deferred compensation" under Section 409A of the Code is a "specified employee" for purposes of Section 409A of the Code, no distribution or payment of any amount that is due because of a "separation from service" (as defined in Section 409A of the Code without regard to alternative definitions thereunder) will be issued or paid before the date that is six (6) months following the date of such Participant's "separation from service" or, if earlier, the date of the Participant's death, unless such distribution or payment can be made in a manner that complies with Section 409A of the Code, and any amounts so deferred will be paid in a lump sum on the day after such six (6) month period elapses, with the balance paid thereafter on the original schedule. The Company shall have no liability to a Participant, or any other party, if an Award that is intended to be exempt from, or compliant with, Section 409A of the Code is not so exempt or compliant or for any other action taken by the Board.

(g) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than such state.

(h) Data Privacy. As a condition of receipt of any Award, each Participant explicitly and unambiguously consents to the collection, use and transfer, in electronic or other form, of personal data as described in this paragraph by and among, as applicable, the Company and its subsidiaries and affiliates for the exclusive purpose of implementing, administering and managing the Participant's participation in the Plan. The Company and its subsidiaries and affiliates may hold certain personal information about a Participant, including but not limited to, the Participant's name, home address and telephone number, date of birth, social security or insurance number or other identification number, salary, nationality, job title(s), any shares of stock held in the Company or any of its subsidiaries and affiliates, details of all Awards, in each case, for the purpose of implementing, managing and administering the Plan and Awards (the "Data"). The Company and its subsidiaries and affiliates may transfer the Data amongst themselves as necessary for the purpose of implementation, administration and management of a Participant's participation in the Plan, and the Company and its subsidiaries and affiliates may each further transfer the Data to any third parties assisting the Company in the implementation, administration and management of the Plan. These recipients may be located in the Participant's country, or elsewhere, and the Participant's country may have different data privacy laws and protections than the recipients' country. Through acceptance of an Award, each Participant authorizes such recipients to receive, possess, use, retain and transfer the Data, in electronic or other form, for the purposes of implementing, administering and managing the Participant's participation in the Plan, including any requisite transfer of such Data as may be required to a broker or other third party with whom the Company or the Participant may elect to deposit any shares of Common Stock. The Data related to a Participant will be held only as long as is necessary to implement, administer, and manage the Participant's participation in the Plan. A Participant may, at any time, view the Data held by the Company with respect to such Participant, request additional information about the storage and processing of the Data with respect to such Participant, recommend any necessary corrections to the Data with respect to the Participant or refuse or withdraw the consents herein in writing, in any case without cost, by contacting his or her local human resources representative. The Company may cancel Participant's ability to participate in the Plan and, in the Board's discretion, the Participant may

forfeit any outstanding Awards if the Participant refuses or withdraws his or her consents as described herein. For more information on the consequences of refusal to consent or withdrawal of consent, Participants may contact their local human resources representative.

(i) Restrictions on Shares; Claw-back Provisions. Shares of Common Stock acquired in respect of Awards shall be subject to such terms and conditions as the Board shall determine, including, without limitation, restrictions on the transferability of shares of Common Stock, the right of the Company to repurchase shares of Common Stock, the right of the Company to require that shares of Common Stock be transferred in the event of certain transactions, tag-along rights, bring-along rights, redemption and co-sale rights and voting requirements. Such terms and conditions may be additional to those contained in the Plan and may, as determined by the Board, be contained in the applicable Award Agreement or in an exercise notice, stockholders' agreement or in such other agreement as the Board shall determine, in each case in a form determined by the Board. The issuance of such shares of Common Stock shall be conditioned on the Participant's consent to such terms and conditions and the Participant's entering into such agreement or agreements. All Awards (including any proceeds, gains or other economic benefit actually or constructively received by Participant upon any receipt or exercise of any Award or upon the receipt or resale of any shares of Common Stock underlying the Award) shall be subject to the provisions of any claw-back policy implemented by the Company, including, without limitation, any claw-back policy adopted to comply with the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act and any rules or regulations promulgated thereunder, to the extent set forth in such claw-back policy and/or in the applicable Award Agreement.

PRAXIS PRECISION MEDICINES, INC.

2017 STOCK INCENTIVE PLAN

CALIFORNIA SUPPLEMENT

Pursuant to Section 10(e) of the Plan, the Board has adopted this supplement for purposes of satisfying the requirements of Section 25102(o) of the California Law:

Any Awards granted under the Plan to a Participant who is a resident of the State of California on the date of grant (a "California Participant") shall be subject to the following additional limitations, terms and conditions:

1. Additional Limitations on Options.

(a) Minimum Vesting Rate. Except in the case of Options granted to California Participants who are officers, directors, managers, consultants or advisors of the Company or its affiliates (which Options may become exercisable at whatever rate is determined by the Board), Options granted to California Participants shall become exercisable at a rate of not less than 20% per year over five years from the date of grant; *provided*, *that*, such Options may be subject to such reasonable forfeiture conditions as the Board may choose to impose and which are not inconsistent with Section 260.140.41 of the California Regulations.

(b) Minimum Exercise Price. The exercise price of Options granted to California Participants may not be less than 85% of the Fair Market Value of the Common Stock on the date of grant in the case of a Nonstatutory Stock Option or less than 100% of the Fair Market Value of the Common Stock on the date of grant in the case of an Incentive Stock Option; *provided*, *however*, that if the California Participant is a person who owns stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or its parent or subsidiary corporations, the exercise price shall be not less than 110% of the Fair Market Value of the Common Stock on the date of grant.

(c) Maximum Duration of Options. No Options granted to California Participants shall have a term in excess of 10 years measured from the Option grant date.

(d) Minimum Exercise Period Following Termination. Unless a California Participant's employment is terminated for cause (as defined by applicable law, the terms of any contract of employment between the Company and such Participant, or in the instrument evidencing the grant of such Participant's Option), in the event of termination of employment of such Participant, such Participant shall have the right to exercise an Option, to the extent that he or she was otherwise entitled to exercise such Option on the date employment terminated, as follows: (i) at least six months from the date of termination, if termination was caused by such Participant's death or "permanent and total disability" (within the meaning of Section 22(e)(3) of the Code) and (ii) at least 30 days from the date of termination, if termination was caused other than by such Participant's death or "permanent and total disability" (within the meaning of Section 22(e)(3) of the Code).

(e) Limitation on Repurchase Rights. If an Option granted to a California Participant gives the Company the right to repurchase shares of Common Stock issued pursuant to the Plan upon termination of employment of such Participant, the terms of such repurchase right must comply with Section 260.140.41(k) of the California Regulations.

2. Additional Limitations for Restricted Stock Awards.

(a) Minimum Purchase Price. The purchase price for a Restricted Stock Award granted to a California Participant shall be not less than 85% of the Fair Market Value of the Common Stock at the time such Participant is granted the right to purchase shares under the Plan or at the time the purchase is consummated; *provided*, *however*, that if such Participant is a person who owns stock possessing more than 10% of the total combined voting power or value of all classes of stock of the Company or its parent or subsidiary corporations, the purchase price shall be not less than 100% of the Fair Market Value of the Common Stock at the time such Participant is granted the right to purchase shares under the Plan or at the time the purchase is consummated.

(b) Limitation of Repurchase Rights. If a Restricted Stock Award granted to a California Participant gives the Company the right to repurchase shares of Common Stock issued pursuant to the Plan upon termination of employment of such Participant, the terms of such repurchase right must comply with Section 260.140.42(h) of the California Regulations.

3. Additional Limitations for Other Stock-Based Awards. The terms of all Awards granted to a California Participant under Section 7 of the Plan shall comply, to the extent applicable, with Section 260.140.41 or Section 260.140.42 of the California Regulations.

4. Additional Requirement to Provide Information to California Participants. The Company shall provide to each California Participant and to each California Participant who acquires Common Stock pursuant to the Plan, not less frequently than annually, copies of annual financial statements (which need not be audited). The Company shall not be required to provide such statements to key employees whose duties in connection with the Company assure their access to equivalent information.

5. Additional Limitations on Timing of Awards. No Award granted to a California Participant shall become exercisable, vested or realizable, as applicable to such Award, unless the Plan has been approved by the holders of a majority of the Company's outstanding voting securities within 12 months before or after the date the Plan was adopted by the Board.

6. Additional Limitations Relating to Definition of Fair Market Value. For purposes of Section 1(b) and 2(a) of this supplement, "Fair Market Value" shall be determined in a manner not inconsistent with Section 260.140.50 of the California Regulations.

7. Additional Restriction Regarding Recapitalizations, Stock Splits, Etc. For purposes of Section 8 of the Plan, in the event of a stock split, reverse stock split, stock dividend, recapitalization, combination, reclassification or other distribution of the Company's securities, the number of securities allocated to each California Participant must be adjusted proportionately and without the receipt by the Company of any consideration from any California Participant.

PRAXIS PRECISION MEDICINES, INC.
AMENDMENT NO. 1 TO
2017 STOCK INCENTIVE PLAN

The Praxis Precision Medicines, Inc. 2017 Stock Incentive Plan, as amended (the "Plan") is hereby amended by the Board of Directors as follows:

Section 4(a) of the Plan is hereby amended to increase the total number of Shares (as defined in the Plan) reserved and available for issuance under the Plan such that Section 4(a) of the Plan, as so amended, shall read in its entirety as follows:

4. Stock Available for Awards.

(a) Number of Shares. Subject to adjustment under Section 8 hereof, Awards may be made under the Plan covering up to 4,794,211 shares of common stock of the Company (the "Common Stock"). If any Award expires, lapses, or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at or below the original issuance price), in any case in a manner that results in any shares of Common Stock covered by such Award not being issued or being so reacquired by the Company, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan. Further, shares of Common Stock delivered (whether by actual delivery or attestation) or tendered to the Company by a Participant to satisfy the applicable exercise or purchase price of an Award and/or to satisfy any applicable tax withholding obligation (including shares retained by the Company from the Award being exercised or purchased and/or creating the tax obligation) shall be added to the number of shares of Common Stock available for the grant of Awards under the Plan. However, in the case of Incentive Stock Options (as hereinafter defined), the foregoing provisions shall be subject to any limitations under the Code. Shares of Common Stock issued under the Plan may consist in whole or in part of authorized but unissued shares, shares purchased on the open market, or treasury shares. At no time while there is any Option (as defined below) outstanding and held by a Participant who was a resident of the State of California on the date of grant of such Option, shall the total number of shares of Common Stock issuable upon exercise of all outstanding options and the total number of shares provided for under any stock bonus or similar plan or agreement of the Company exceed the applicable percentage as calculated in accordance with the conditions and exclusions of Section 260.140.45 of the California Code of Regulations (the "California Regulations"), based on the shares of the Company which are outstanding at the time the calculation is made.

ADOPTED BY BOARD OF DIRECTORS: October 2, 2018

ADOPTED BY STOCKHOLDERS: October 2, 2018

PRAXIS PRECISION MEDICINES, INC.
AMENDMENT NO. 2 TO
2017 STOCK INCENTIVE PLAN

The Praxis Precision Medicines, Inc. 2017 Stock Incentive Plan, as amended (the "Plan") is hereby amended by the Board of Directors as follows:

Section 4(a) of the Plan is hereby amended to increase the total number of Shares (as defined in the Plan) reserved and available for issuance under the Plan such that Section 4(a) of the Plan, as so amended, shall read in its entirety as follows:

"4. Stock Available for Awards.

(a) Number of Shares. Subject to adjustment under Section 8 hereof, Awards may be made under the Plan covering up to 5,043,824 shares of common stock of the Company (the "Common Stock"). If any Award expires, lapses, or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at or below the original issuance price), in any case in a manner that results in any shares of Common Stock covered by such Award not being issued or being so reacquired by the Company, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan. Further, shares of Common Stock delivered (whether by actual delivery or attestation) or tendered to the Company by a Participant to satisfy the applicable exercise or purchase price of an Award and/or to satisfy any applicable tax withholding obligation (including shares retained by the Company from the Award being exercised or purchased and/or creating the tax obligation) shall be added to the number of shares of Common Stock available for the grant of Awards under the Plan. However, in the case of Incentive Stock Options (as hereinafter defined), the foregoing provisions shall be subject to any limitations under the Code. Shares of Common Stock issued under the Plan may consist in whole or in part of authorized but unissued shares, shares purchased on the open market, or treasury shares. At no time while there is any Option (as defined below) outstanding and held by a Participant who was a resident of the State of California on the date of grant of such Option, shall the total number of shares of Common Stock issuable upon exercise of all outstanding options and the total number of shares provided for under any stock bonus or similar plan or agreement of the Company exceed the applicable percentage as calculated in accordance with the conditions and exclusions of Section 260.140.45 of the California Code of Regulations (the "California Regulations"), based on the shares of the Company which are outstanding at the time the calculation is made."

ADOPTED BY BOARD OF DIRECTORS: November 18, 2019

ADOPTED BY STOCKHOLDERS: November 18, 2019

PRAXIS PRECISION MEDICINES, INC.
AMENDMENT NO. 3 TO
2017 STOCK INCENTIVE PLAN

The Praxis Precision Medicines, Inc. 2017 Stock Incentive Plan, as amended (the "Plan") is hereby amended by the Board of Directors as follows:

A. Section 8(b)(2) of the Plan is hereby amended by adding the following sentence at the end of such Section 8(b)(2):

For purposes of clauses (i) and (iv) above, any escrow, holdback, indemnification, earn-out or similar provisions in the definitive documents effecting such Reorganization Event may apply to any assumed Awards or payments in respect of Awards to the same extent and in the same manner as such provisions apply to holders of Common Stock.

ADOPTED BY BOARD OF DIRECTORS: December 10, 2019

ADOPTED BY STOCKHOLDERS: December 10, 2019

PRAXIS PRECISION MEDICINES, INC.

Restricted Stock Agreement
Granted Under 2017 Stock Incentive Plan

AGREEMENT made this [____] day of [_____, 20[●], between Praxis Precision Medicines, Inc., a Delaware corporation (the "Company"), and [_____] (the "Participant").

For valuable consideration, receipt of which is acknowledged, the parties hereto agree as follows:

1. Purchase of Shares.

The Company shall issue and sell to the Participant, and the Participant shall purchase from the Company, subject to the terms and conditions set forth in this Agreement and in the Company's 2017 Stock Incentive Plan (the "Plan"), [_____] shares (the "Shares") of common stock of the Company ("Common Stock"), at a purchase price of $[___] per share. The aggregate purchase price for the Shares shall be paid by the Participant by check payable to the order of the Company or such other method as may be acceptable to the Company. Upon receipt by the Company of payment for the Shares, the Company shall issue to the Participant one or more certificates in the name of the Participant for that number of Shares purchased by the Participant. The Participant agrees that the Shares shall be subject to the purchase options set forth in Sections 2 and 5 of this Agreement and the restrictions on Transfer (as defined below) set forth in Section 4 of this Agreement. Subject to applicable law, the Participant agrees to become party to any voting agreement, drag along agreement, right of first refusal and co-sale agreement, or any other agreement approved by the Board of Directors of the Company and creating obligations of or among any stockholder of the Company that holds in the aggregate shares of Common Stock equal to or greater than the aggregate number of shares of Common Stock held by the Participant, in each case calculated on a fully-diluted basis, as the Company may request.

2. Purchase Option.

(a) In the event that the Participant ceases to be employed by the Company for any reason or no reason, with or without cause, prior to the fourth anniversary of the Vesting Commencement Date (as defined below), the Company shall have the right and option (the "Purchase Option") to purchase from the Participant, for a sum of $[_____] per share (the "Option Price"), some or all of the Unvested Shares (as defined below).

"Unvested Shares" means the total number of Shares multiplied by the Applicable Percentage at the time the Purchase Option becomes exercisable by the Company, with the resulting number of Shares rounded down to the nearest whole Share. The "Applicable Percentage" shall be (i) 100% during the period ending on the first anniversary of the Vesting Commencement Date, (ii) 75% less 2.0833% for each month of employment completed by the Participant with the Company from and after the first anniversary of the Vesting Commencement Date, and (iii) zero on or after the fourth anniversary of the Vesting Commencement Date. For purposes of this Agreement, "Vesting Commencement Date" shall mean [_____].

[*Additional provision at the discretion of the Board:* Additionally, if following a Company Sale (as defined below), the Participant is terminated without Cause (as defined below), then 100% of the Shares that are not then vested shall become vested. If the Participant is party to an employment or severance agreement with the Company that contains a definition of "cause" for termination of employment, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant shall be considered to have been discharged for Cause if the Company determines, within 30 days after the Participant's resignation, that discharge for cause was warranted.]

(b) If the Participant is employed by a parent or subsidiary of the Company, any references in this Agreement to employment with the Company or termination of employment by or with the Company shall instead be deemed to refer to such parent or subsidiary.

3. Exercise of Purchase Option and Closing.

(a) The Company may exercise the Purchase Option by delivering or mailing to the Participant (or his estate) a written notice of exercise of the Purchase Option in connection with or following Participant's termination of employment or service with the Company (an "Exercise Notice"). Such Exercise Notice shall specify the number of Shares to be purchased and may not be given after the 90 day period following a written request from the Participant (following Participant's termination of employment or service with the Company) that the Company indicate whether or not it plans to exercise the Purchase Option. If and to the extent the Purchase Option is not exercised within such 90-day period (if requested by the Participant pursuant to the foregoing sentence), the Purchase Option shall expire and terminate effective upon the expiration of such 90-day period.

(b) Within 10 days after delivery to the Participant of the Exercise Notice pursuant to subsection (a) above, the Participant (or his estate) shall, pursuant to the provisions of the Joint Escrow Instructions referred to in Section 7 below, tender to the Company at its principal offices the certificate or certificates representing the Shares which the Company has elected to purchase in accordance with the terms of this Agreement, duly endorsed in blank or with duly endorsed stock powers attached thereto, all in form suitable for the Transfer of such Shares to the Company. Promptly following its receipt of such certificate or certificates, the Company shall pay to the Participant the aggregate Option Price for such Shares (provided that any delay in making such payment shall not invalidate the Company's exercise of the Purchase Option with respect to such Shares).

(c) After the time at which any Shares are required to be delivered to the Company for Transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Shares, but shall, in so far as permitted by law, treat the Company as the owner of such Shares.

(d) The Option Price may be payable, at the option of the Company, in cancellation of all or a portion of any outstanding indebtedness of the Participant to the Company or in cash (by check) or both.

(e) The Company shall not purchase any fraction of a Share upon exercise of the Purchase Option, and any fraction of a Share resulting from a computation made pursuant to Section 2 of this Agreement shall be rounded to the nearest whole Share (with any one-half Share being rounded upward).

(f) The Company may assign its Purchase Option to one or more persons or entities.

4. Restrictions on Transfer.

(a) The Participant shall not sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively "Transfer") any Shares, or any interest therein, that are subject to the Purchase Option, except that the Participant may Transfer such Shares (i) to or for the benefit of any spouse, children, parents, uncles, aunts, siblings, grandchildren and any other relatives approved by the Board of Directors (collectively, "Approved Relatives") or to a trust established solely for the benefit of the Participant and/or Approved Relatives, provided that such Shares shall remain subject to this Agreement (including without limitation the restrictions on Transfer set forth in this Section 4, the Purchase Option and the right of first refusal set forth in Section 5) and such permitted transferee shall, as a condition to such Transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement or (ii) subject to Section 9(b) hereof, as part of the sale of all or substantially all of the shares of capital stock of the Company (including pursuant to a merger or consolidation), provided that, in accordance with the Plan, the securities or other property received by the Participant in connection with such transaction shall remain subject to this Agreement.

(b) The Participant shall not Transfer any Shares, or any interest therein, that are no longer subject to the Purchase Option, except in accordance with Section 5 below.

(c) The Company shall not be required (1) to Transfer on its books any of the Shares which shall have been sold or Transferred in violation of any of the provisions set forth in this Agreement or the Company's Bylaws, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or Transferred.

5. Right of First Refusal.

(a) If the Participant proposes to Transfer any Shares that are no longer subject to the Purchase Option (either because they are no longer Unvested Shares or because the Purchase Option expired unexercised), then the Participant shall first give written notice of the proposed Transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to Transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the Transfer.

(b) For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for Transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, Transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such Transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares Transferred pursuant to this Section 5 shall remain subject to this Agreement (including without limitation the restrictions on Transfer set forth in Section 4 and the right of first refusal set forth in this Section 5) and such transferee shall, as a condition to such Transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement.

(d) After the time at which the Offered Shares are required to be delivered to the Company for Transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) The following transactions shall be exempt from the provisions of this Section 5:

(1) a Transfer of Shares to or for the benefit of any Approved Relatives, or to a trust established solely for the benefit of the Participant and/or Approved Relatives;

(2) any Transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a Transfer pursuant to clause (1) above, such Shares shall remain subject to this Agreement (including without limitation the restrictions on Transfer set forth in Section 4 and the right of first refusal set forth in this Section 5) and such transferee shall, as a condition to such Transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Agreement.

(f) The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 5 to one or more persons or entities.

(g) The provisions of this Section 5 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, a majority (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction) (a "Company Sale").

6. Agreement in Connection with Initial Public Offering.

The Participant hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the effective date of any registration statement of the Company filed under the Securities Act and ending on the date specified by the Company and the representative of the underwriters of Common Stock (or other securities) of the Company (such period not to exceed one hundred eighty (180) days, or such other period as may be requested by the Company or an underwriter to accommodate regulatory restrictions on (1) the publication or other distribution of research reports, and (2) analyst recommendations and opinions, including, but not limited to, the restrictions contained in FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4), or any successor provisions or amendments thereto), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise Transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held immediately before the effective date of the registration statement for such offering or (ii) enter into any swap or other arrangement that Transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise.

Participant agrees to execute and deliver such other agreements as may be reasonably requested by the Company or the representative of the underwriters of Common Stock (or other securities) which are consistent with the foregoing or which are necessary to give further effect thereto. In addition, if requested by the Company or the representative of the underwriters of Common Stock (or other securities) of the Company, Participant shall provide, within ten days of such request, such information as may be required by the Company or such representative in connection with the completion of any public offering of the Company's securities pursuant to a registration statement filed under the Securities Act. The obligations described in this Section 6 shall not apply to a registration relating solely to employee benefit plans on Form S-1 or Form S-8 or similar forms that may be promulgated in the future, or a registration relating solely to a Securities and Exchange Commission ("SEC") Rule 145 transaction on Form S-4 or similar forms that may be promulgated in the future. The Company may impose stop-transfer instructions with respect to the shares of Common Stock (or other securities) subject to the foregoing restriction until the end of said one hundred and eighty (180) day (or other) period. Participant agrees that any transferee of the Shares shall be bound by this Section 6.

The foregoing provisions of this Section 6 shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, or the Transfer of any shares to any trust for the direct or indirect benefit of the Participant or the immediate family of the Participant, provided that the trustee of the trust agrees to be bound in writing by the restrictions set forth herein, and provided further that any such Transfer shall not involve a disposition for value. The underwriters in connection with such registration are intended third party beneficiaries of this Section 6 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

7. Escrow.

The Participant shall, upon the execution of this Agreement, execute Joint Escrow Instructions in the form attached to this Agreement as Exhibit A. The Joint Escrow Instructions shall be delivered to the Secretary of the Company, as escrow agent thereunder. The Participant shall deliver to such escrow agent a stock assignment duly endorsed in blank, in the form attached to this Agreement as Exhibit B, and hereby instructs the Company to deliver to such escrow agent, on behalf of the Participant, the certificate(s) evidencing the Shares issued hereunder. Such materials shall be held by such escrow agent pursuant to the terms of such Joint Escrow Instructions. As a further condition to the Company's obligations under this Agreement, the spouse or registered domestic partner of Participant, if any, shall execute and deliver to the Company the Consent of Spouse or Domestic Partner attached hereto as Exhibit C.

8. Restrictive Legends.

All certificates representing Shares shall have affixed thereto legends in substantially the following form, in addition to any other legends that may be required under federal or state securities laws:

> "The shares of stock represented by this certificate are subject to restrictions on transfer and an option to purchase set forth in a certain Restricted Stock Agreement between the Company and the registered owner of these shares (or his predecessor in interest). Such restrictions on transfer and option to purchase are binding upon transferees of these securities, and such Restricted Stock Agreement is available for inspection without charge at the office of the Secretary of the company."

"The shares represented by this certificate have not been registered under the Securities Act of 1933, as amended (the "Act"), and may not be sold, transferred or otherwise disposed of in the absence of an effective registration statement related thereto under the Act or an opinion of counsel in a form satisfactory to the company to the effect that such registration is not required under the Act."

The Company may be authorized from time to time pursuant to its certificate of incorporation to issue more than one (1) class or series of stock. In such case and at any time or from time to time thereafter the Company will furnish without charge to you upon request the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

9. Provisions of the Plan.

(a) This Agreement is subject to the provisions of the Plan, a copy of which is furnished to the Participant with this Agreement.

(b) As provided in the Plan, upon the occurrence of a Reorganization Event (as defined in the Plan), the repurchase and other rights of the Company hereunder shall inure to the benefit of the Company's successor and shall apply to the cash, securities or other property into which the Shares were converted or for which the Shares were exchanged pursuant to such Reorganization Event, in the same manner and to the same extent as they applied to the Shares under this Agreement. If, in connection with a Reorganization Event, a portion of the cash, securities and/or other property received upon the conversion or exchange of the Shares is to be placed into escrow to secure indemnification or similar obligations, the mix between the vested and unvested portion of such cash, securities and/or other property that is placed into escrow shall be the same as the mix between the vested and unvested portion of such cash, securities and/or other property that is not subject to escrow.

10. Investment Representations.

The Participant represents, warrants and covenants as follows:

(a) The Participant is purchasing the Shares for his own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act, or any rule or regulation under the Securities Act.

(b) The Participant has had such opportunity as he has deemed adequate to obtain from representatives of the Company such information as is necessary to permit him to evaluate the merits and risks of his investment in the Company.

(c) The Participant has sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

(d) The Participant can afford a complete loss of the value of the Shares and is able to bear the economic risk of holding such Shares for an indefinite period.

(e) The Participant understands that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act; (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

11. Withholding Taxes; Section 83(b) Election.

(a) The Participant acknowledges and agrees that the Company has the right to deduct from payments of any kind otherwise due to the Participant any federal, state or local taxes of any kind required by law to be withheld with respect to the purchase of the Shares by the Participant or the lapse of the Purchase Option. No Shares will be released from the Purchase Option pursuant to this Agreement unless and until the Company satisfies all applicable federal, state, and local or other income and employment tax withholding obligations as described in the Plan.

(b) The Participant has reviewed with the Participant's own tax advisors the federal, state, local and foreign tax consequences of this investment and the transactions contemplated by this Agreement. The Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. The Participant understands that the Participant (and not the Company) shall be responsible for the Participant's own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement. The Participant understands that it may be beneficial in many circumstances to elect to be taxed at the time the Shares are purchased rather than when and as the Company's Purchase Option expires by electing to be taxed currently on the difference between the purchase price of the Shares and their Fair Market Value on the date of purchase by filing an election under Section 83(b) of the Internal Revenue Code of 1986 with the I.R.S. within 30 days from the date of purchase of the Shares.

PARTICIPANT ACKNOWLEDGES THAT IT IS PARTICIPANT'S SOLE RESPONSIBILITY AND NOT THE COMPANY'S TO FILE TIMELY THE ELECTION UNDER SECTION 83(b), EVEN IF PARTICIPANT REQUESTS THE COMPANY OR ITS REPRESENTATIVES TO MAKE THIS FILING ON PARTICIPANT'S BEHALF.

12. Miscellaneous.

(a) No Rights to Employment. The Participant acknowledges and agrees that the vesting of the Shares pursuant to Section 2 hereof is earned only by continuing service as an employee at the will of the Company (not through the act of being hired or purchasing shares hereunder). The Participant further acknowledges and agrees that the transactions contemplated hereunder and the vesting schedule set forth herein do not constitute an express or implied promise of continued engagement as an employee or consultant for the vesting period, for any period, or at all.

(b) Severability. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, and each other provision of this Agreement shall be severable and enforceable to the extent permitted by law.

(c) Waiver. Any provision for the benefit of the Company contained in this Agreement may be waived, either generally or in any particular instance, by the Board of Directors of the Company.

(d) Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Company and the Participant and their respective heirs, executors, administrators, legal representatives, successors and assigns, subject to the restrictions on Transfer set forth in Sections 4 and 5 of this Agreement.

(e) Notice. All notices required or permitted hereunder shall be in writing and deemed effectively given upon personal delivery or five days after deposit in the United States Post Office, by registered or certified mail, postage prepaid, addressed to the other party hereto at the address shown beneath his or its respective signature to this Agreement, or at such other address or addresses as either party shall designate to the other in accordance with this Section 12(e).

(f) Pronouns. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns and pronouns shall include the plural, and vice versa.

(g) Entire Agreement. This Agreement and the Plan constitute the entire agreement between the parties, and supersedes all prior agreements and understandings, relating to the subject matter of this Agreement.

(h) Amendment. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Participant.

(i) Further Instruments. Participant hereby agrees to execute such further instruments and to take such further action as may be reasonably necessary to carry out the purposes and intent of this Agreement.

(j) Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the State of Delaware without regard to any applicable conflicts of laws.

(k) Tax Indemnity. Participant shall, if required by the Company, enter into an election with the Company or a subsidiary (in a form approved by the Company) under which any liability to the Company's (or a subsidiary's) Tax Liability, including, but not limited to, National Insurance Contributions ("NICs") and Fringe Benefit Tax ("FBT"), is transferred to and met by Participant. For purposes of this Section 13(k), Tax Liability shall mean any and all liability under applicable non-U.S. laws, rules or regulations from any income tax, the Company's (or a subsidiary's) NICs, FBT or similar liability and Participant's NICs, FBT or similar liability under non-U.S. laws that are attributable to: (A) the grant of, or any other benefit derived by the Participant from the Shares; (B) the acquisition by Participant of the Shares; or (C) the disposal of any Shares acquired. Participant shall indemnify and hold harmless the Company and any of its subsidiaries from any and all Tax Liability.

(l) Participant's Acknowledgments. The Participant acknowledges that he or she: (i) has read this Agreement; (ii) has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of the Participant's own choice or has voluntarily declined to seek such counsel; (iii) understands the terms and consequences of this Agreement; (iv) is fully aware of the legal and binding effect of this Agreement; (v) to the extent the Shares are issued in uncertificated form, agrees that this Agreement constitutes the notice required by Section 151(f) of the Delaware General Corporation Law; (vi) understands that the law firm of Faber Daeufer & Itrato PC, is acting as counsel to the Company in connection with the transactions contemplated by the Agreement, and is not acting as counsel for the Participant, and (vii) if Participant is married or in a registered domestic partnership, his or her spouse or registered domestic partner has signed the Consent of Spouse or Domestic Partner attached to this Agreement as Exhibit C.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

PRAXIS PRECISION MEDICINES, INC.

By: _____
Title: _____
Address: _____
_____

_____
Name of Participant

Address: _____

Exhibit A

PRAXIS PRECISION MEDICINES, INC.

Joint Escrow Instructions

_____, [●]

Precision Medicines, Inc.
[Address]
Attn: Secretary

Dear Sir:

As Escrow Agent for Praxis Precision Medicines, Inc., a Delaware corporation, and its successors in interest under the Restricted Stock Agreement (the "Agreement") of even date herewith, to which a copy of these Joint Escrow Instructions is attached (the "Company"), and the undersigned person ("Holder"), you are hereby authorized and directed to hold the documents delivered to you pursuant to the terms of the Agreement in accordance with the following instructions:

1. Appointment. Holder irrevocably authorizes the Company to deposit with you any certificates evidencing Shares (as defined in the Agreement) to be held by you hereunder and any additions and substitutions to said Shares. For purposes of these Joint Escrow Instructions, "Shares" shall be deemed to include any additional or substitute property. Holder does hereby irrevocably constitute and appoint you as his attorney-in-fact and agent for the term of this escrow to execute with respect to such Shares all documents necessary or appropriate to make such Shares negotiable and to complete any transaction herein contemplated. Subject to the provisions of this Section 1 and the terms of the Agreement, Holder shall exercise all rights and privileges of a stockholder of the Company while the Shares are held by you.

2. Closing of Purchase.

(a) Upon any purchase by the Company of the Shares pursuant to the Agreement, the Company shall give to Holder and you a written notice specifying the number of Shares to be purchased, the purchase price for the Shares, as determined pursuant to the Agreement, and the time for a closing hereunder (the "Closing") at the principal office of the Company. Holder and the Company hereby irrevocably authorize and direct you to close the transaction contemplated by such notice in accordance with the terms of said notice.

(b) At the Closing, you are directed (i) to date the stock assignment form or forms necessary for the Transfer of the Shares, (ii) to fill in on such form or forms the number of Shares being Transferred, and (iii) to deliver the same, together with the certificate or certificates evidencing the Shares to be Transferred, to the Company against the simultaneous delivery to you of the purchase price for the Shares being purchased pursuant to the Agreement.

3. Withdrawal. The Holder shall have the right to withdraw from this escrow any Shares as to which the Purchase Option (as defined in the Agreement) has terminated or expired.

4. Duties of Escrow Agent.

(a) Your duties hereunder may be altered, amended, modified or revoked only by a writing signed by all of the parties hereto.

(b) You shall be obligated only for the performance of such duties as are specifically set forth herein and may rely and shall be protected in relying or refraining from acting on any instrument reasonably believed by you to be genuine and to have been signed or presented by the proper party or parties. You shall not be personally liable for any act you may do or omit to do hereunder as Escrow Agent or as attorney-in-fact of Holder while acting in good faith and in the exercise of your own good judgment, and any act done or omitted by you pursuant to the advice of your own attorneys shall be conclusive evidence of such good faith.

(c) You are hereby expressly authorized to disregard any and all warnings given by any of the parties hereto or by any other person or entity, excepting only orders or process of courts of law, and are hereby expressly authorized to comply with and obey orders, judgments or decrees of any court. If you are uncertain of any actions to be taken or instructions to be followed, you may refuse to act in the absence of an order, judgment or decrees of a court. In case you obey or comply with any such order, judgment or decree of any court, you shall not be liable to any of the parties hereto or to any other person or entity, by reason of such compliance, notwithstanding any such order, judgment or decree being subsequently reversed, modified, annulled, set aside, vacated or found to have been entered without jurisdiction.

(d) You shall not be liable in any respect on account of the identity, authority or rights of the parties executing or delivering or purporting to execute or deliver the Agreement or any documents or papers deposited or called for hereunder.

(e) You shall be entitled to employ such legal counsel and other experts as you may deem necessary properly to advise you in connection with your obligations hereunder and may rely upon the advice of such counsel.

(f) Your rights and responsibilities as Escrow Agent hereunder shall terminate if (i) you cease to be Secretary of the Company or (ii) you resign by written notice to each party. In the event of a termination under clause (i), your successor as Secretary shall become Escrow Agent hereunder; in the event of a termination under clause (ii), the Company shall appoint a successor Escrow Agent hereunder.

(g) If you reasonably require other or further instruments in connection with these Joint Escrow Instructions or obligations in respect hereto, the necessary parties hereto shall join in furnishing such instruments.

(h) It is understood and agreed that if you believe a dispute has arisen with respect to the delivery and/or ownership or right of possession of the securities held by you hereunder, you are authorized and directed to retain in your possession without liability to anyone all or any part of said securities until such dispute shall have been settled either by mutual written agreement of the parties concerned or by a final order, decree or judgment of a court of competent jurisdiction after the time for appeal has expired and no appeal has been perfected, but you shall be under no duty whatsoever to institute or defend any such proceedings.

(i) These Joint Escrow Instructions set forth your sole duties with respect to any and all matters pertinent hereto and no implied duties or obligations shall be read into these Joint Escrow Instructions against you.

(j) The Company shall indemnify you and hold you harmless against any and all damages, losses, liabilities, costs, and expenses, including attorneys' fees and disbursements, (including without limitation the fees of counsel retained pursuant to Section 4(e) above, for anything done or omitted to be done by you as Escrow Agent in connection with this Agreement or the performance of your duties hereunder, except such as shall result from your gross negligence or willful misconduct.

5. Notice. Any notice required or permitted hereunder shall be given in writing and shall be deemed effectively given upon personal delivery or upon deposit in the United States Post Office, by registered or certified mail with postage and fees prepaid, addressed to each of the other parties thereunto entitled at the following addresses, or at such other addresses as a party may designate by ten days' advance written notice to each of the other parties hereto.

COMPANY:	Notices to the Company shall be sent to the address set forth in the salutation hereto, Attn: President
HOLDER:	Notices to Holder shall be sent to the address set forth below Holder's signature below.
ESCROW AGENT:	Notices to the Escrow Agent shall be sent to the address set forth in the salutation hereto.

6. Miscellaneous.

(a) By signing these Joint Escrow Instructions, you become a party hereto only for the purpose of said Joint Escrow Instructions, and you do not become a party to the Agreement.

(b) This instrument shall be binding upon and inure to the benefit of the parties hereto and their respective successors and permitted assigns.

Very truly yours,

PRAXIS PRECISION MEDICINES, INC.

By:_____
Title:_____

HOLDER:

_____
(Signature)

_____
Print Name

Address:_____

_____

Date Signed:_____

ESCROW AGENT:

_____
Secretary

Exhibit B

(STOCK ASSIGNMENT SEPARATE FROM CERTIFICATE)

FOR VALUE RECEIVED, I hereby sell, assign and transfer unto _____ (_____) shares of Common Stock, $0.0001 par value per share, of Precision Medicines, Inc. (the "Company") standing in my name on the books of the Company represented by Certificate(s) Number _____ herewith, and do hereby irrevocably constitute and appoint _____ attorney to transfer the said stock on the books of the Company with full power of substitution in the premises.

Dated: _____

IN PRESENCE OF _____

_____

NOTICE: The signature(s) to this assignment must correspond with the name as written upon the face of the certificate, in every particular, without alteration, enlargement, or any change whatever and must be guaranteed by a commercial bank, trust company or member firm of the Boston, New York or Midwest Stock Exchange.

Exhibit C

CONSENT OF SPOUSE OR DOMESTIC PARTNER

I, _____, spouse or registered domestic partner of _____, have read and approve the Restricted Stock Agreement dated _____, _____, between my spouse or registered domestic partner and Praxis Precision Medicines, Inc. In consideration of granting of the right to my spouse or registered domestic partner to purchase shares of common stock of Precision Medicines, Inc. set forth in the Restricted Stock Agreement, I hereby appoint my spouse or registered domestic partner as my attorney-in-fact in respect to the exercise of any rights under the Agreement and agree to be bound by the provisions of the Restricted Stock Agreement insofar as I may have any rights in said Restricted Stock Agreement or any shares issued pursuant thereto under the community property laws or similar laws relating to marital property in effect in the state of our residence as of the date of the signing of the foregoing Restricted Stock Agreement.

Dated: _____, _____

_____

Signature of Spouse or Registered Domestic Partner

PRAXIS PRECISION MEDICINES, INC.

Nonstatutory Stock Option Agreement

Granted Under 2017 Stock Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Praxis Precision Medicines, Inc., a Delaware corporation (the "Company"), on [_____] (the "Grant Date") to [_____], an employee, consultant or director of the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2017 Stock Incentive Plan (the "Plan"), a total of [_____] shares (the "Shares") of common stock of the Company ("Common Stock") at $[_____] per Share. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on [_____] (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall not be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

[Subject to Section 3(b) below, this option will become exercisable ("vest") as to 25% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Shares at the end of each successive month following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date.] In determining the number of vested Shares at the time of any exercise, the number of Shares shall be rounded down to the nearest whole Share. For purposes of this Agreement, "Vesting Commencement Date" shall mean [_____].

[Additionally, if within 12 months following a Company Sale (as defined below), the Participant is terminated without Cause (as defined below), then 100% of the Shares that are not then vested shall become vested.]

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A and signed by the Participant, and when applicable, a signed and completed Consent of Spouse or Domestic Partner in the form attached hereto as Exhibit B, and received by the Company at its principal

office, accompanied by this agreement, and payment in full in the manner provided in the Plan. The Participant may purchase less than the number of Shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares. Subject to applicable law and as a condition to the exercise of this option and the issuance of any shares hereunder, the Participant agrees to become party to any voting agreement, drag along agreement, right of first refusal and co-sale agreement, or any other agreement approved by the Board of Directors of the Company (the "Board") and creating obligations of or among any stockholder of the Company that holds in the aggregate shares of Common Stock equal to or greater than the aggregate number of shares of Common Stock held by the Participant, in each case calculated on a fully-diluted basis, as the Company may request.

(b) Time for Exercise of Certain Options. With respect to any option that constitutes a plan for the deferral of compensation within the meaning of Section 409A of the Code, such option may only be exercised for vested Shares upon the earliest to occur of the following events (all terms within the meaning of Section 409A of the Code): (i) the Participant's separation from service; (ii) the Participant's death or disability; or (iii) a change in the ownership or effective control of the Company, or in the ownership of a substantial portion of the assets of the Company.

(c) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, officer or director of, or consultant or advisor to, the Company or any other entity the employees, officers, directors, consultants, or advisors of which are eligible to receive option grants under the Plan (an "Eligible Participant").

(d) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (e) and (f) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(e) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for Cause (as defined below), this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(f) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment is terminated by the Company for Cause, the right to exercise this option shall terminate immediately upon the effective date of such termination of employment. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment by the Company for Cause, and the effective date of such employment termination is subsequent to the date of delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate upon the effective date of such termination of employment). If the Participant is party to an employment or severance agreement with the Company that contains a definition of "cause" for termination of employment, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant shall be considered to have been discharged for Cause if the Company determines, within 30 days after the Participant's resignation, that discharge for cause was warranted.

4. Company Right of First Refusal.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) Termination. The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other

than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, a majority (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction) (a "Company Sale").

(h) No Obligation to Recognize Invalid Transfer. The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(i) Legends. The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

> "The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain stock option agreement with the Company."

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address Rule 2711(f) of the National Association of Securities Dealers, Inc. or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. Withholding.

No Shares will be issued pursuant to the exercise of this option unless and until the Company satisfies all applicable federal, state, and local or other income and employment tax withholding obligations as described in the Plan.

7. Transfer Restrictions.

(a) This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

(b) The Participant agrees that he or she will not transfer any Shares issued pursuant to the exercise of this option unless the transferee, as a condition to such transfer, delivers to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of Section 4 and Section 5; provided that such a written confirmation shall not be required with respect to (1) Section 4 after such provision has terminated in accordance with Section 4(g) or (2) Section 5 after the completion of the lock-up period in connection with the Company's initial underwritten public offering.

8. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

IN WITNESS WHEREOF, the Company has caused this option to be executed under its corporate seal by its duly authorized officer. This option shall take effect as a sealed instrument.

PRAXIS PRECISION MEDICINES, INC.

By: _____

Name: _____

Title: _____

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's 2017 Stock Incentive Plan.

PARTICIPANT:

_____

Address: _____

_____

Exhibit A

NOTICE OF STOCK OPTION EXERCISE

Date: _____[1]

Praxis Precision Medicines, Inc.

Attention: Treasurer

Dear Sir or Madam:

I am the holder of _____[2] Stock Option granted to me under the Praxis Precision Medicines, Inc. (the "Company") 2017 Stock Incentive Plan on _____[3] for the purchase of _____[4] shares of Common Stock of the Company at a purchase price of $_____[5] per share.

I hereby exercise my option to purchase _____[6] shares of Common Stock (the "Shares"), for which I have enclosed _____[7] in the amount of _____[8]. Please register my stock certificate as follows:

Name(s): _____[9]

_____

Address: _____

Tax I.D. #: _____[10]

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1 Enter the date of exercise.

2 Enter either "an Incentive" or "a Nonstatutory".

3 Enter the date of grant.

4 Enter the total number of shares of Common Stock for which the option was granted.

5 Enter the option exercise price per share of Common Stock.

6 Enter the number of shares of Common Stock to be purchased upon exercise of all or part of the option.

7 Enter "cash", "personal check" or if permitted by the option or Plan, "stock certificates No. XXXX and XXXX".

8 Enter the dollar amount (price per share of Common Stock times the number of shares of Common Stock to be purchased), or the number of shares tendered. Fair market value of shares tendered, together with cash or check, must cover the purchase price of the shares issued upon exercise.

9 Enter name(s) to appear on stock certificate: (a) Your name only; (b) Your name and other name (i.e., John Doe and Jane Doe, Joint Tenants With Right of Survivorship); or (c) In the case of a Nonstatutory option only, a Child's name, with you as custodian (i.e., Jane Doe, Custodian for Tommy Doe). Note: There may be income and/or gift tax consequences of registering shares in a Child's name.

10 Social Security Number of Holder(s).

I represent, warrant and covenant as follows:

1. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the "Securities Act"), or any rule or regulation under the Securities Act.

2. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

3. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

4. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

5. I understand that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____

(Signature)

Exhibit B

CONSENT OF SPOUSE OR DOMESTIC PARTNER

I, _____, spouse or registered domestic partner of _____, have read and approve the Nonstatutory Stock Option Agreement dated _____, _____, between my spouse or registered domestic partner and Praxis Precision Medicines, Inc. (the "Agreement"). In consideration of granting an option to my spouse or registered domestic partner to purchase shares of Common Stock of Praxis Precision Medicines, Inc. set forth in the Agreement, I hereby appoint my spouse or registered domestic partner as my attorney-in-fact in respect to the exercise of any rights under the Agreement and agree to be bound by the provisions of the Agreement insofar as I may have any rights in said Agreement or any shares issued pursuant thereto under the community property laws or similar laws relating to marital property in effect in the state of our residence as of the date of the signing of the foregoing Agreement.

Dated: _____, ___

_____

Signature of Spouse or Registered Domestic Partner

PRAXIS PRECISION MEDICINES, INC.

Incentive Stock Option Agreement
Granted Under 2017 Stock Incentive Plan

1. Grant of Option.

This agreement evidences the grant by Praxis Precision Medicines, Inc., a Delaware corporation (the "Company"), on [_____] (the "Grant Date") to [_____], an employee of the Company (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein and in the Company's 2017 Stock Incentive Plan (the "Plan"), a total of [_____] shares (the "Shares") of common stock of the Company ("Common Stock") at $[_____]per Share. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on [_____] (the "Final Exercise Date").

It is intended that the option evidenced by this agreement shall be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

[This option will become exercisable ("vest") as to 25% of the original number of Shares on the first anniversary of the Vesting Commencement Date (as defined below) and as to an additional 2.0833% of the original number of Shares at the end of each successive month following the first anniversary of the Vesting Commencement Date until the fourth anniversary of the Vesting Commencement Date.] In determining the number of vested Shares at the time of any exercise, the number of Shares shall be rounded down to the nearest whole Share. For purposes of this Agreement, "Vesting Commencement Date" shall mean [_____].

[Additionally, if within 12 months following a Company Sale (as defined below), the Participant is terminated without Cause (as defined below), then 100% of the Shares that are not then vested shall become vested.]

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof or the Plan.

3. Exercise of Option.

(a) Exercise. Each election to exercise this option shall be accompanied by a completed Notice of Stock Option Exercise in the form attached hereto as Exhibit A and signed by the Participant, and when applicable, a signed and completed Consent of Spouse or Domestic Partner in the form attached hereto as Exhibit B, and received by the Company at its principal office, accompanied by this agreement, and payment in full in the manner provided in the Plan.

The Participant may purchase less than the number of Shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares. Subject to applicable law and as a condition to the exercise of this option and the issuance of any shares hereunder, the Participant agrees to become party to any voting agreement, drag along agreement, right of first refusal and co-sale agreement, or any other agreement approved by the Board of Directors of the Company (the "Board") and creating obligations of or among any stockholder of the Company that holds in the aggregate shares of Common Stock equal to or greater than the aggregate number of shares of Common Stock held by the Participant, in each case calculated on a fully-diluted basis, as the Company may request.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, officer or director of, or consultant or advisor to, the Company or any parent or subsidiary of the Company as defined in Section 424(e) or (f) of the Code (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the non-competition or confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for Cause (as defined below), this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment is terminated by the Company for Cause, the right to exercise this option shall terminate immediately upon the effective date of such termination of employment. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment by the Company for Cause, and the effective date of such employment termination is subsequent to the date of delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination of employment (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate upon the effective date of such termination of employment). If the Participant is party to an

employment or severance agreement with the Company that contains a definition of "cause" for termination of employment, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant shall be considered to have been discharged for Cause if the Company determines, within 30 days after the Participant's resignation, that discharge for cause was warranted.

4. Company Right of First Refusal.

(a) Notice of Proposed Transfer. If the Participant proposes to sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively, "transfer") any Shares acquired upon exercise of this option, then the Participant shall first give written notice of the proposed transfer (the "Transfer Notice") to the Company. The Transfer Notice shall name the proposed transferee and state the number of such Shares the Participant proposes to transfer (the "Offered Shares"), the price per share and all other material terms and conditions of the transfer.

(b) Company Right to Purchase. For 30 days following its receipt of such Transfer Notice, the Company shall have the option to purchase all or part of the Offered Shares at the price and upon the terms set forth in the Transfer Notice. In the event the Company elects to purchase all or part of the Offered Shares, it shall give written notice of such election to the Participant within such 30-day period. Within 10 days after his or her receipt of such notice, the Participant shall tender to the Company at its principal offices the certificate or certificates representing the Offered Shares to be purchased by the Company, duly endorsed in blank by the Participant or with duly endorsed stock powers attached thereto, all in a form suitable for transfer of the Offered Shares to the Company. Promptly following receipt of such certificate or certificates, the Company shall deliver or mail to the Participant a check in payment of the purchase price for such Offered Shares; provided that if the terms of payment set forth in the Transfer Notice were other than cash against delivery, the Company may pay for the Offered Shares on the same terms and conditions as were set forth in the Transfer Notice; and provided further that any delay in making such payment shall not invalidate the Company's exercise of its option to purchase the Offered Shares.

(c) Shares Not Purchased By Company. If the Company does not elect to acquire all of the Offered Shares, the Participant may, within the 30-day period following the expiration of the option granted to the Company under subsection (b) above, transfer the Offered Shares which the Company has not elected to acquire to the proposed transferee, provided that such transfer shall not be on terms and conditions more favorable to the transferee than those contained in the Transfer Notice. Notwithstanding any of the above, all Offered Shares transferred pursuant to this Section 4 shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(d) Consequences of Non-Delivery. After the time at which the Offered Shares are required to be delivered to the Company for transfer to the Company pursuant to subsection (b) above, the Company shall not pay any dividend to the Participant on account of such Offered Shares or permit the Participant to exercise any of the privileges or rights of a stockholder with respect to such Offered Shares, but shall, insofar as permitted by law, treat the Company as the owner of such Offered Shares.

(e) Exempt Transactions. The following transactions shall be exempt from the provisions of this Section 4:

(1) any transfer of Shares to or for the benefit of any spouse, child or grandchild of the Participant, or to a trust for their benefit;

(2) any transfer pursuant to an effective registration statement filed by the Company under the Securities Act of 1933, as amended (the "Securities Act"); and

(3) the sale of all or substantially all of the outstanding shares of capital stock of the Company (including pursuant to a merger or consolidation);

provided, however, that in the case of a transfer pursuant to clause (1) above, such Shares shall remain subject to the right of first refusal set forth in this Section 4 and such transferee shall, as a condition to such transfer, deliver to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of this Section 4.

(f) Assignment of Company Right. The Company may assign its rights to purchase Offered Shares in any particular transaction under this Section 4 to one or more persons or entities.

(g) Termination. The provisions of this Section 4 shall terminate upon the earlier of the following events:

(1) the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement filed by the Company under the Securities Act; or

(2) the sale of all or substantially all of the outstanding shares of capital stock, assets or business of the Company, by merger, consolidation, sale of assets or otherwise (other than a merger or consolidation in which all or substantially all of the individuals and entities who were beneficial owners of the Company's voting securities immediately prior to such transaction beneficially own, directly or indirectly, a majority (determined on an as-converted basis) of the outstanding securities entitled to vote generally in the election of directors of the resulting, surviving or acquiring corporation in such transaction) (a "Company Sale").

(h) No Obligation to Recognize Invalid Transfer. The Company shall not be required (1) to transfer on its books any of the Shares which shall have been sold or transferred in violation of any of the provisions set forth in this Section 4, or (2) to treat as owner of such Shares or to pay dividends to any transferee to whom any such Shares shall have been so sold or transferred.

(i) Legends. The certificate representing Shares shall bear a legend substantially in the following form (in addition to, or in combination with, any legend required by applicable federal and state securities laws and agreements relating to the transfer of the Company securities):

> "The shares represented by this certificate are subject to a right of first refusal in favor of the Company, as provided in a certain stock option agreement with the Company."

5. Agreement in Connection with Initial Public Offering.

The Participant agrees, in connection with the initial underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending 180 days after the date of the final prospectus relating to the offering (plus up to an additional 34 days to the extent requested by the managing underwriters for such offering in order to address Rule 2711(f) of the National Association of Securities Dealers, Inc. or any similar successor provision), and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

6. Tax Matters.

(a) Withholding. No Shares will be issued pursuant to the exercise of this option unless and until the Company satisfies all applicable federal, state, and local or other income and employment tax withholding obligations as described in the Plan.

(b) Disqualifying Disposition. If the Participant disposes of Shares acquired upon exercise of this option within two years from the Grant Date or one year after such Shares were acquired pursuant to exercise of this option, the Participant shall notify the Company in writing of such disposition.

7. Transfer Restrictions.

(a) This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant.

(b) The Participant agrees that he or she will not transfer any Shares issued pursuant to the exercise of this option unless the transferee, as a condition to such transfer, delivers to the Company a written instrument confirming that such transferee shall be bound by all of the terms and conditions of Section 4 and Section 5; provided that such a written confirmation shall not be required with respect to (1) Section 4 after such provision has terminated in accordance with Section 4(g) or (2) Section 5 after the completion of the lock-up period in connection with the Company's initial underwritten public offering.

8. Provisions of the Plan.

This option is subject to the provisions of the Plan (including the provisions relating to amendments to the Plan), a copy of which is furnished to the Participant with this option.

IN WITNESS WHEREOF, the Company has caused this option to be executed under its corporate seal by its duly authorized officer. This option shall take effect as a sealed instrument.

PRAXIS PRECISION MEDICINES, INC.

By: _____

Name: _____

Title: _____

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof. The undersigned hereby acknowledges receipt of a copy of the Company's 2017 Stock Incentive Plan.

PARTICIPANT: _____

Address: _____

_____

Exhibit A

NOTICE OF STOCK OPTION EXERCISE

Date: _____[1]

Praxis Precision Medicines, Inc.

Attention: Treasurer

Dear Sir or Madam:

I am the holder of _____[2] Stock Option granted to me under the Praxis Precision Medicines, Inc. (the "Company") 2017 Stock Incentive Plan on _____[3] for the purchase of _____[4] shares of Common Stock of the Company at a purchase price of $_____[5] per share.

I hereby exercise my option to purchase _____[6] shares of Common Stock (the "Shares"), for which I have enclosed _____[7] in the amount of _____[8]. Please register my stock certificate as follows:

Name(s): _____[9]

Address: _____

Tax I.D. #: _____[10]

1 Enter the date of exercise.
2 Enter either "an Incentive" or "a Nonstatutory".
3 Enter the date of grant.
4 Enter the total number of shares of Common Stock for which the option was granted.
5 Enter the option exercise price per share of Common Stock.
6 Enter the number of shares of Common Stock to be purchased upon exercise of all or part of the option.
7 Enter "cash", "personal check" or if permitted by the option or Plan, "stock certificates No. XXXX and XXXX".
8 Enter the dollar amount (price per share of Common Stock times the number of shares of Common Stock to be purchased), or the number of shares tendered. Fair market value of shares tendered, together with cash or check, must cover the purchase price of the shares issued upon exercise.
9 Enter name(s) to appear on stock certificate: (a) Your name only; (b) Your name and other name (i.e., John Doe and Jane Doe, Joint Tenants With Right of Survivorship); or (c) In the case of a Nonstatutory option only, a Child's name, with you as custodian (i.e., Jane Doe, Custodian for Tommy Doe). Note: There may be income and/or gift tax consequences of registering shares in a Child's name.
10 Social Security Number of Holder(s).

I represent, warrant and covenant as follows:

1. I am purchasing the Shares for my own account for investment only, and not with a view to, or for sale in connection with, any distribution of the Shares in violation of the Securities Act of 1933 (the "Securities Act"), or any rule or regulation under the Securities Act.

2. I have had such opportunity as I have deemed adequate to obtain from representatives of the Company such information as is necessary to permit me to evaluate the merits and risks of my investment in the Company.

3. I have sufficient experience in business, financial and investment matters to be able to evaluate the risks involved in the purchase of the Shares and to make an informed investment decision with respect to such purchase.

4. I can afford a complete loss of the value of the Shares and am able to bear the economic risk of holding such Shares for an indefinite period.

5. I understand that (i) the Shares have not been registered under the Securities Act and are "restricted securities" within the meaning of Rule 144 under the Securities Act, (ii) the Shares cannot be sold, transferred or otherwise disposed of unless they are subsequently registered under the Securities Act or an exemption from registration is then available; (iii) in any event, the exemption from registration under Rule 144 will not be available for at least one year and even then will not be available unless a public market then exists for the Common Stock, adequate information concerning the Company is then available to the public, and other terms and conditions of Rule 144 are complied with; and (iv) there is now no registration statement on file with the Securities and Exchange Commission with respect to any stock of the Company and the Company has no obligation or current intention to register the Shares under the Securities Act.

Very truly yours,

_____

(Signature)

Exhibit B

CONSENT OF SPOUSE OR DOMESTIC PARTNER

I, _____, spouse or registered domestic partner of _____, have read and approve the Incentive Stock Option Agreement dated _____, _____, between my spouse or registered domestic partner and Praxis Precision Medicines, Inc. (the "Agreement"). In consideration of granting an option to my spouse or registered domestic partner to purchase shares of Common Stock of Praxis Precision Medicines, Inc. set forth in the Agreement, I hereby appoint my spouse or registered domestic partner as my attorney-in-fact in respect to the exercise of any rights under the Agreement and agree to be bound by the provisions of the Agreement insofar as I may have any rights in said Agreement or any shares issued pursuant thereto under the community property laws or similar laws relating to marital property in effect in the state of our residence as of the date of the signing of the foregoing Agreement.

Dated: _____, _____

_____

Signature of Spouse or Registered Domestic Partner

CERTAIN CONFIDENTIAL PORTIONS OF THIS EXHIBIT HAVE BEEN OMITTED AND REPLACED WITH "[***]". SUCH IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS (I) NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF DISCLOSED.

LICENSE AGREEMENT

This License Agreement ("**Agreement**") is made effective as of December 31, 2017 (the "**Effective Date**") by and between **PRAXIS PRECISION MEDICINES, INC.**, a Delaware corporation having a place of business at 101 Main Street, Cambridge, MA 02142 ("**Licensee**"), and **PURDUE NEUROSCIENCE COMPANY**, a Delaware general partnership having a place of business at One Stamford Forum, 201 Tresser Boulevard, Stamford, Connecticut 06901-3431 ("**Licensor**").

RECITALS

WHEREAS, Licensor is the owner of and has rights to Know-How concerning a GABA-A Positive Allosteric Modulator designated as V134444;

WHEREAS, Licensee is a biopharmaceutical company engaged, among other things, in the research and development of pharmaceutical products;

WHEREAS, Licensee desires to obtain certain rights to research, develop and commercialize pharmaceutical products through the use of Licensor's Know-How, and Licensor desires to grant Licensee such rights, all as set forth below; and

NOW THEREFORE, based on the foregoing premises and the mutual covenants and obligations set forth below, the Parties agree as follows:

ARTICLE 1
DEFINITIONS

Unless this Agreement expressly provides to the contrary, the following terms, whether used in the singular or plural, have the respective meanings set forth below. The words "include," "includes" and "including" when used in this Agreement are deemed to be followed by the phrase "but not limited to".

1.1 "**Additional Agreements**" has the meaning set forth in 6.2(c).

1.2 "**Additional Securities**" means shares of capital stock, convertible securities or warrants, options, or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee; provided that, "other rights to subscribe for, purchase or acquire" shall not include (i) preemptive or other rights to participate in new offerings of securities by Licensee after the Effective Date, (ii) obligations under a purchase agreement for preferred stock of Licensee to acquire additional shares of such preferred stock on the same terms as those purchased at an initial closing upon the passage of time or meeting (or waiver) of specified Licensee performance conditions, provided that, for clarity, upon purchase or acquisition all such shares of preferred stock shall be "Additional Securities" for purposes of the Agreement, or (iii) anti-dilution provisions that have not been triggered and (iv) anti-dilution provisions that would not be triggered by the issuance of equity securities to Licensor pursuant to or in connection with the provisions of this Agreement.

1.3 "**Affiliate**" means with respect to a Party, any person, firm, trust, partnership, corporation, company or other entity or combination thereof that, directly or indirectly through one (1) or more intermediaries, controls, is controlled by, or is under common control with such Party. In this definition, "control" and "controlled" means ownership of fifty percent (50%) or more, including ownership by one or more trusts with substantially the same beneficial interests, of the voting and equity rights of such person,

firm, trust, partnership, corporation, company or other entity or combination thereof or the power to direct the management of such person, firm, trust, partnership, corporation, company or other entity or combination thereof. Notwithstanding the foregoing, for purposes of Sections 1.60, 1.77, 3.2(a), 3.2(b), 8.1, 9.4(b), 9.5(c) and 11.8, Affiliates of Licensee shall exclude any person, firm, trust, partnership, corporation, company or other entity or combination thereof controlled by Clarus Lifesciences III, L.P. or other fund under common control with Clarus Lifesciences III, L.P. (collectively, "**Clarus Affiliate Persons**") other than Licensee and its subsidiaries and Clarus Affiliate Persons that have been granted rights by Licensee or its Affiliates with respect to Licensed Products.

1.4 "**Agreement**" has the meaning set forth in the preamble.

1.5 "**Anti-Dilution Shares**" has the meaning set forth in Section 3.3(b).

1.6 "**Bankruptcy Code**" has the meaning set forth in Section 9.4(b).

1.7 "**Board**" means the Board of Directors of Licensee.

1.8 "**Business Day**" means any day other than a day on which the commercial banks in New York City are authorized or required to be closed.

1.9 "**Calendar Quarter**" means the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 and December 31; provided, however, that (a) the first Calendar Quarter of the Term shall extend from the commencement of such period to the end of the first complete Calendar Quarter thereafter; and (b) the last Calendar Quarter of the Term shall end upon the expiration or termination of this Agreement.

1.10 "**Calendar Year**" means (a) for the first year of the Term, the period beginning on the Effective Date and ending on December 31, 2017, (b) for each year of the Term thereafter, each successive period beginning on January 1 and ending twelve (12) consecutive calendar months later on December 31, and (c) for the last year of the Term, the period beginning on January 1 of the year in which the Agreement expires or terminates and ending on the effective date of expiration or termination of this Agreement.

1.11 "**Change of Control**" means, with respect to a Party, any of the following events: (a) any Third Party (or group of Third Parties acting in concert) acquires, directly or indirectly, shares of such Party representing at least a majority of the voting power (where voting refers to being entitled to vote for the election of directors) then outstanding of such Party; (b) such Party consolidates with or merges into another corporation or entity which is a Third Party, or any corporation or entity which is a Third Party consolidates with or merges into such Party, in either event pursuant to a transaction in which at least a majority of the voting power of the acquiring or resulting entity outstanding immediately after such consolidation or merger is not held by the holders of the outstanding voting power of such Party immediately preceding such consolidation or merger; or (c) such Party conveys, transfers, licenses and/or leases all or substantially all of its assets to a Third Party. Notwithstanding anything to the contrary in this paragraph, a Change of Control shall not include any transaction or series of transactions: (i) involving solely a Party and its Affiliates, (ii) in which the stockholders of a Party immediately prior to such transaction hold at least fifty (50%) of the voting power of the surviving company or ultimate parent company of the surviving company, (iii) in which voting securities of a Party are acquired by any employee benefit plan (or related trust) sponsored or maintained by such Party or its Affiliates; or (iv) for bona fide capital raising purposes (including a public offering) or tax purposes (including the change of place of incorporation or domicile of a Party).

1.12 "**Combination Product**" means any single product in finished form containing both a Licensed Product and one or more other active ingredients or functional devices.

1.13 "**Commercially Reasonable Efforts**" means using such effort and employing such resources that are substantially similar to the effort and resources that a biopharmaceutical company similarly situated to Licensee would devote to a product of similar market potential, profit potential and strategic value at a similar stage of its product life, taking into consideration all relevant factors, including the nature of the product, the clinical setting in which it is expected to be used, stage of development, mechanism of action, efficacy and safety relative to competitive products in or expected to be introduced into the marketplace, difficulties associated with technology transfer, process development, scale-up or manufacturing, safety issues, legal difficulties and intellectual property ownership, actual or anticipated regulatory authority approved labeling, the nature and extent of market exclusivity (including patent coverage and Regulatory Exclusivity), cost and likelihood of obtaining regulatory approval, but excluding from such consideration all payments due to Purdue under this Agreement. Commercially Reasonable Efforts will be determined on a market-by-market and indication-by-indication basis for a particular product, and it is anticipated that the level of effort will be different for different markets, and will change over time, reflecting changes in the status of the product and the market(s) involved.

1.14 "**Common Stock**" means shares of the Licensee's common stock, par value $0.001 per share.

1.15 "**Compounds**" means V134444 and any metabolites, salts, esters, hydrates, solvates, isomers, enantiomers, crystalline forms, co-crystalline forms, amorphous forms, free acid forms, free base forms, pro-drug (including any ester pro-drug) forms, racemates, polymorphs, chelates, stereoisomers, or tautomers of V134444, and all optically active forms thereof, provided however that all of the foregoing excludes ganaxolone and any salts, hydrates, solvates, isomers, enantiomers, crystalline forms, co-crystalline forms, amorphous forms, free acid forms, free base forms, racemates, polymorphs, chelates, stereoisomers, and tautomers of ganaxolone.

1.16 "**Confidential Information**" means any scientific, technical, trade or business information that is (a) given by one Party to the other and treated by the disclosing Party as confidential or proprietary, or (b) developed by or on behalf of a Party under the terms of this Agreement. The disclosing Party will, to the extent practical, use reasonable efforts to label or identify as confidential, at the time of disclosure, all Confidential Information that is disclosed by the disclosing Party in writing or other tangible form. Notwithstanding anything to the contrary in the foregoing, all non-public information regarding a Party's business including all business and product plans relating to the development and commercialization of a Compound or Licensed Product, customer lists and all agreements between a Party and any Third Party, will be considered Confidential Information, whether or not labeled as confidential. Notwithstanding the foregoing, the Exclusively Licensed Know-How and the Lapsed Patents, to the extent relating to V134444, and to the extent not generally available to the public as of the Effective Date, will be deemed the Confidential Information of Licensee, and for purposes of Section 8.1, Licensee shall be deemed the "disclosing Party" and Licensor shall be deemed the "receiving Party" with respect thereto, provided, however, that the confidentiality obligations and use restrictions with respect thereto shall end upon expiration or termination of the rights granted to Licensee under Section 2.1 of this Agreement.

1.17 "**Control**" or "**Controlled**" means, with respect to an item or right, the possession, whether by ownership or license (in each case other than pursuant to this Agreement), by a Party of the right to grant to the other Party access to or a license to or under each such item or right as provided in this Agreement without violating any agreement or other arrangement with any Third Party.

1.18 "**Cover**", "**Covers**" or "**Covered**" means, with respect to a product, that in the absence of a license granted under a Valid Claim of a Patent, the making, using, selling, importation, or exportation of such product would infringe such Valid Claim (or, in the case of a Valid Claim that has not yet issued, would infringe such Valid Claim if it were to issue) or that in the absence of a license granted under Know-How, the making, using, selling, importation, or exportation of such product would constitute a misappropriation of such Know-How.

1.19 "**EMA**" means the European Medicines Agency, or any successor agency with similar responsibilities.

1.20 "**Exclusively Licensed Know-How**" means all Know-How Controlled by Licensor relating solely and exclusively to the Compounds, that is listed in the Technology Transfer Plan or otherwise transferred to Licensee pursuant to this Agreement. For clarity, Exclusively Licensed Know-How includes any and all INDs for Licensor's V134444 product and Lapsed Patents. For further clarity, Exclusively Licensed Know-How excludes any and all Know-How Controlled by Licensor that relates to ganaxolone.

1.21 "**FDA**" means the United States Food and Drug Administration, or any successor agency with similar responsibilities.

1.22 "**FFDCA**" means the United States Federal Food, Drug and Cosmetic Act, as amended from time to time, including all regulations promulgated thereunder.

1.23 "**Field**" means all fields of use.

1.24 "**First Commercial Sale**" means the first arm's length commercial sale for monetary value by Licensee or its Related Parties of a Licensed Product in the Territory for end use or consumption by the general public of such Licensed Product in any country following receipt of Regulatory Approval in such country; provided, that First Commercial Sale does not include: (a) any sales to or between Related Parties of Licensee; (b) any use of such Licensed Product in clinical trials, pre-clinical trials or other development activities; or (c) the disposal or transfer of such Licensed Product for a bona fide charitable purpose.

1.25 "**Fully-Diluted Basis**" means, as of a specified date, the number of shares of Common Stock then-outstanding plus the number of shares of common stock of Licensee issuable upon exercise or conversion of then-outstanding convertible securities or warrants, options, or other rights to subscribe for, purchase or acquire from Licensee any capital stock of Licensee (which shall be determined without regard to whether such securities or rights are then vested, exercisable or convertible); *provided* that, for clarity, "other rights to subscribe for, purchase or acquire" shall not include (i) preemptive or other rights to participate in new offerings of securities by Licensee, (ii) obligations under a purchase agreement for preferred stock of Licensee to acquire additional shares of such preferred stock on the pre-agreed terms upon the passage of time or meeting (or waiver) of specified Licensee performance conditions, provided that, for clarity, upon purchase or acquisition all such shares of preferred stock shall be outstanding and included in the calculation of "Fully-Diluted Basis" for purposes of the Agreement, (iii) anti-dilution provisions that have not been triggered and (iv) anti-dilution provisions that would not be triggered by the issuance of equity securities to Licensor pursuant to or in connection with the provisions of this Agreement.

1.26 "**GAAP**" means generally accepted accounting principles of the United States or any other accounting principles mutually agreed upon by the Parties.

1.27 "**IFRS**" means the International Financial Reporting Standards.

1.28 "**IND**" means (a) an Investigational New Drug Application as defined in the FFDCA and applicable regulations promulgated by the FDA, or (b) an equivalent application to the equivalent agency in any other country or group of countries, the filing of which is necessary to commence clinical testing of a pharmaceutical product in humans in a particular jurisdiction.

1.29 "**Indemnify**" has the meaning set forth in Section 7.1.

1.30 "**IPO**" means an underwritten initial public offering of Common Stock of Licensee pursuant to a registration statement on Form S-1, declared effective by the SEC resulting in all outstanding preferred stock in Licensee being converted to common stock.

1.31 "**Joint Inventions**" has the meaning set forth in Section 5.1.

1.32 "**Joint Patents**" has the meaning set forth in Section 5.1.

1.33 "**Know-How**" means any and all commercial, technical, regulatory, scientific and other know-how and information, knowledge, technology, materials, methods, processes, practices, standard operating procedures, formulae, instructions, skills, techniques, procedures, assay protocols, experiences, ideas, technical assistance, designs, drawings, assembly procedures, specifications, regulatory filings, data and results (including biological, chemical, pharmacological, toxicological, pharmaceutical, physical and analytical, pre-clinical, clinical, safety, regulatory, manufacturing and quality control data and know-how, including study designs and protocols and all data and information used in support of the V134444 IND), whether or not confidential, proprietary or patentable, in written, electronic or any other form.

1.34 "**Lapsed Patents**" means the patent applications listed on Exhibit A.

1.35 "**Licensed Intellectual Property**" means all Exclusively Licensed Know-How, Non- Exclusively Licensed Know-How and Lapsed Patents.

1.36 "**Licensed Products**" means all products incorporating or comprising a Compound, including any and all formulations and for any and all modes of administration.

1.37 "**Licensor Improvements**" means all Patents outside the field of pain Controlled by Licensor or its Affiliates at any time during the Term that (a) are necessary for the development, manufacture or commercialization of a Compound as a single agent (b) Cover a method of use of a Compound as a single agent, or (c) Cover a method of delivery, formulation or manufacture of a Compound as a single agent necessary for the development, manufacture or commercialization of a Compound as a single agent.

1.38 "**Licensor Indemnitees**" has the meaning set forth in Section 7.1.

1.39 "**Losses**" has the meaning set forth in Section 7.1.

1.40 "**Major Market Country**" means any of France, Germany, Italy, Spain, and the United Kingdom.

1.41 "**MHLW**" means the Ministry for Health, Labor and Welfare in Japan, or any successor agency with similar responsibilities.

1.42 "**NDA**" means a new drug application (as such term is used under the FFDCA), a biologic license application (as such term is used under the FFDCA), or other applicable pharmaceutical, biologic, or device approval submission to the FDA for Regulatory Approval (or, in a country other than the United States, the equivalent necessary submissions to the applicable regulatory authority for Regulatory Approval).

1.43 "**Net Sales**" means the gross invoiced sales of Licensed Products by Licensee and its Related Parties to Third Parties (other than a Sublicensee), less the following deductions to the extent specifically relating to sales of such Licensed Products:

(a) discounts (including trade, quantity and cash discounts) actually allowed, cash and non-cash coupons, retroactive price reductions, and charge-back payments and rebates granted to any non-Sublicensee Third Party (including to governmental entities or agencies, hospital buying groups, group purchasing organizations and other purchasers, reimbursers, customers, distributors, wholesalers, and group purchasing and managed care organizations or entities (and other similar entities and institutions));

(b) credits or allowances given, if any, including on account of price adjustments, recalls, claims, damaged goods, rejections or returns of items previously sold (including Licensed Products returned in connection with recalls or withdrawals);

(c) amounts written off by reason of uncollectible debt provided such amounts do not reduce the calculation of Net Sales by more than [***], and provided that if the debt later is paid, the corresponding amount will be added to the Net Sales of the period during which it is paid;

(d) rebates (or their equivalent) granted and similar payments made, administrative fees, distribution fees and similar fees granted or paid by Licensee or its Related Parties (including to governmental authorities, hospital buying groups, group purchasing organizations and other purchasers, reimbursers, customers, distributors, wholesalers, and managed care organizations and entities (and other similar entities and institutions));

(e) insurance, customs charges, freight, postage, shipping, handling, and other transportation costs incurred by Licensee or any of its Related Parties in shipping Licensed Products to a non-Sublicensee Third Party and included in the invoiced price of such Licensed Products; and

(f) import taxes, export taxes, excise taxes (including pharmaceutical excise taxes (such as those imposed by the United States Patient Protection and Affordable Care Act of 2010 (Pub. L. No. 111-48) and other comparable laws)), sales taxes, value-added taxes, consumption taxes, duties or other taxes directly related to such sales, to the extent that such taxes are included in the gross invoice price of the Licensed Product and actually borne by Licensee or its Related Parties without reimbursement from any Third Party, but excluding income taxes and other taxes assessed against the income derived from such sale, withholding taxes, net profit taxes and franchise taxes of any kind.

Such amounts shall be determined from the books and records of License and its Related Parties, maintained in accordance with GAAP or IFRS, as applicable and consistently applied. With respect to Net Sales not denominated in U.S. Dollars, License shall convert such Net Sales from the applicable foreign currency into U.S. Dollars in accordance with Section 3.6.

Net Sales shall not be imputed to (a) any use of Licensed Product in clinical trials, pre-clinical trials or other development activities, (b) the disposal or transfer of Licensed Product for a bona fide charitable purpose, (c) the transfer of reasonable and customary quantities of free samples of Product other than for subsequent resale or (d) any sale or transfer of Licensed Product on a named patient basis or for compassionate use, in each case at or below cost.

If Licensee or its Related Parties sells any Licensed Product in the form of a Combination Product (defined below), Net Sales of such Combination Product for the purpose of determining the royalty due to Licensor pursuant to Section 3.4 will be calculated on a country-by-country basis [***] in which sales of both occurred. If, on a country-by-country basis, such Licensed Product and other active ingredient(s) in the Combination Product are not sold separately in such country so that the calculation in the immediately prior sentence can be made, Net Sales for the purposes of determining royalties due to Licensor pursuant to Section 3.4 for the Combination Product will be [***]. In such event, Licensee shall notify Licensor of such determination and provide Licensor with data to support such determination. Licensor shall have the right to review such determination of fair market values and, if Licensor disagrees with such determination, to notify Licensee of such disagreement within [***] after Licensee notifies Licensor of such determination. If Licensor notifies Licensee that Licensor disagrees with such determination within such [***] period and if thereafter the Parties are unable to agree in good faith as to such respective fair market values, then such matter shall be resolved as provided in Section 10.1. If Licensor does not notify Licensee that Licensor disagrees with such determination within such [***] period, such determination of Licensee shall be conclusive and binding on the Parties.

1.44 "**Next Financing**" means the first round of preferred stock financing (including if issued in combination with other securities) of Licensee after the last and final sale of Series B Preferred Stock and all obligations and rights to purchase Series B Preferred Stock have expired or been satisfied.

1.45 "**Non-Breaching Party**" has the meaning set forth in Section 9.3.

1.46 "**Non-Exclusively Licensed Know-How**" means all Know-How relating to the Compounds Controlled by Licensor not falling within the above definition of Exclusively Licensed Know How, that is listed in the Technology Transfer Plan or otherwise transferred to Licensee pursuant to this Agreement.

1.47 "**Notified Party**" has the meaning set forth in Section 9.3.

1.48 "**PAC**" has the meaning set forth in Section 4.3.

1.49 "**Party**" means Licensee or Licensor; "**Parties**" means, collectively, Licensee and Licensor.

1.50 "**Patent**" means any United States or foreign (i) unexpired letters patent (including inventor's certificates) which have not been held invalid or unenforceable by a court of competent jurisdiction from which no appeal can be taken or has been taken within the required time period, including any substitution, extension, registration, confirmation, reissue, re-examination, renewal or any like filing, and (ii) pending applications for letters patent, including any provisional, converted provisional, continued prosecution application, continuation, divisional or continuation-in-part.

1.51 "**Phase 2 Clinical Trial**" means, as to a specific Licensed Product, a human clinical trial in any country that is intended to preliminarily evaluate the efficacy and safety or dose-ranging of such product for a particular indication or indications in patients with the disease or indication under study or would otherwise satisfy requirements of 21 CFR 312.21(b) in the United States, as amended from time to time, or the corresponding regulation in jurisdictions other than the United States.

1.52 "**Phase 3 Clinical Trial**" means, as to a specific Licensed Product, (a) a human clinical trial in any country that is performed to obtain Regulatory Approval of such product after preliminary evidence suggesting effectiveness of such product under evaluation has been obtained, and intended to confirm with statistical significance the efficacy and safety of such product, to evaluate the overall benefit-

risk relationship of such product and to provide an adequate basis for physician labeling, or (b) a human clinical trial of such product that satisfies the requirements of 21 C.F.R. § 312.21(c) in the United States, as amended from time to time, or the corresponding regulation in jurisdictions other than the United States.

1.53 "**Praxis**" and "**Licensee**" both mean Praxis Precision Medicines, Inc., a Delaware corporation.

1.54 "**Prior Confidentiality Agreement**" means that certain confidentiality letter agreement by and between Licensee and Purdue Pharma L.P. dated as of December 14, 2017.

1.55 "**Qualified Financing**" means the first to occur of (i) a financing of Licensee after the Effective Date with aggregate gross proceeds received of not less than [***], or such lesser amount as agreed upon by Licensor, from the sale (or series of related sales) by Licensee of its Series B Preferred Stock, including the aggregate amount of debt securities converted into equity securities upon conversion of any then outstanding promissory notes or other instruments of similar tenor, but exclusive of the conversion of any promissory notes or other instruments of similar tenor outstanding on and as of the Effective Date, or (ii) an IPO.

1.56 "**Qualified Financing Date**" means May 1, 2018, provided that, Licensor may elect, upon written notice to Licensee given no later than five (5) Business Days prior to May 1, 2018, to extend such date to June 1, 2018, in which case the term "Qualified Financing Date" shall be deemed amended, without further action of the Parties, to mean June 1, 2018.

1.57 "**Regulatory Approval**" means, as applicable, (i) with reference to the United States, the approval of an NDA by the FDA necessary for the manufacture and commercialization of a pharmaceutical, biologic or device product in the United States, (ii) with reference to the European Union and/or United Kingdom, the approval of an NDA by the EMA or the European Commission filed pursuant to the centralized approval procedure and necessary for the manufacture and commercialization of a pharmaceutical, biologic or device product in the European Union and/or United Kingdom, (iii) with reference to a Major Market Country, the approval of an NDA by the applicable regulatory authority in such Major Market Country (when such NDA has been separately filed with such regulatory authority and not as part of the centralized approval procedure of the EMA or the European Commission) and necessary for the manufacture and commercialization of a pharmaceutical, biologic or device product in such Major Market Country, and (iv) with reference to Japan, the approval of an NDA by the MHLW necessary for the manufacture and commercialization of a pharmaceutical, biologic or device product in Japan, including in each case of the preceding clauses (i) through (iv), any applicable pricing and governmental reimbursement approvals legally or practically required to manufacture and commercialize such product in such country or jurisdiction

1.58 "**Regulatory Exclusivity**" means any exclusive marketing rights or data protection or other exclusivity rights conferred by any regulatory authority with respect to a Licensed Product in a country or jurisdiction in the Territory, including but not limited to orphan drug or pediatric exclusivity.

1.59 "**Regulatory Filings**" has the meaning set forth in Section 4.4(b).

1.60 "**Related Party**" means Licensee's Affiliates and Sublicensees.

1.61 "**Reporting Period**" shall mean (a) during the period prior to the first Change of Control of Praxis, as Licensee hereunder, [***] and (b) on and after the first Change of Control of Praxis, as Licensee hereunder, [***], provided that in each case of (a) and (b), such period shall be extended by an additional [***] for the reporting and payment of royalties on Net Sales made by Sublicensee.

1.62 "**Royalty Term**" has the meaning set forth in Section 3.4(b).

1.63 "**SAB**" has the meaning set forth in Section 3.3(f).

1.64 "**Safety Determination**" means: (a) a good faith determination by the Board that, based at least in part on the occurrence or observation of a Safety Issue, the Licensed Product presents a risk of death, a life-threatening condition or a serious safety or health concern to patients such that Licensee cannot ethically and in good faith continue to administer, or permit the administration of, the Licensed Product to patients; (b) a data safety monitoring board has recommended the termination of any clinical trial of the Licensed Product after the occurrence or observation of a Safety Issue; (c) the FDA or other applicable regulatory authority has issued a clinical hold, or otherwise required or recommended termination or suspension of, any clinical trial of the Licensed Product after the occurrence or observation of a Safety Issue; or (d) a good faith determination by the Board that based on the occurrence or observation of a Safety Issue, and taking into account all other relevant factors, the continued development and possible commercialization of the Licensed Product is not commercially reasonable for Licensee.

1.65 "**Safety Issue**" means a serious adverse event, toxicology finding or other serious safety issue or tolerability finding or issue with respect to a Licensed Product administered to humans that, as of the Effective Date, was not publicly known to be an adverse event, toxicology finding or other safety or tolerability finding or issue associated with positive allosteric modulators of GABA-A, as a class.

1.66 "**SEC**" means the U.S. Securities and Exchange Commission.

1.67 "**Series A Preferred Stock**" means the Series A Convertible Preferred Stock of Licensee, $0.0001 par value per share.

1.68 "**Series A Preferred Stock Transaction Agreements**" has the meaning set forth in Section 3.3(b).

1.69 "**Series B Preferred Stock**" means the Series B Convertible Preferred Stock of Licensee, $0.0001 par value per share.

1.70 "**Series B Preferred Stock Transaction Agreements**" has the meaning set forth in Section 3.3(a).

1.71 "**Series X Preferred Stock**" means the Series A Preferred Stock and/or Series B Preferred Stock.

1.72 "**Shares**" means the aggregate number of shares of Common Stock issuable or issued upon conversion of the Series X Preferred Stock issued to Licensor pursuant to the terms of Section 3.3(a), Section 3.3(b), Section 3.3(c) and Section 3.3(d), without taking into account any sales or transfers of any such shares by Licensor after the date of issuance of the Series X Preferred Stock in accordance with the terms of this Agreement.

1.73 "**Sublicensee**" means an entity to which Licensee grants a sublicense under Licensee's rights under Article 2; provided that "Sublicensee" does not include any of Licensee's Affiliates or wholesale distributors of Licensee or its Affiliates who purchase Licensed Products from Licensee or its Affiliates in an arm's length transaction and who have no other obligation, including a reporting obligation, to Licensee or its Affiliates, with respect to any subsequent use or disposition of such Licensed Products.

1.74 "**Technology Transfer Plan**" has the meaning set forth in Section 4.1

1.75 "**Term**" has the meaning set forth in Section 9.1.

1.76 "**Territory**" means all the countries and territories of the world.

1.77 "**Third Party**" means any entity other than Licensor, Licensee and their respective Affiliates.

1.78 "**Third Party Agreements**" means any contract, agreement, arrangement or understanding, written or oral, with a Third Party with respect to any Licensed Intellectual Property, other than material transfer agreements, sponsored research agreements or similar agreements entered into in the ordinary course of business that do not provide for the payment of any milestones, royalties or other fees or charges with respect to the Compounds or Licensed Products that may be researched, developed or commercialized by Licensee or its Related Parties in accordance with the terms of this Agreement.

1.79 "**Third Party Claim**" has the meaning set forth in Section 7.1.

1.80 "**V134444**" means the GABA-A Positive Allosteric Modulator designated as V13444 by Licensor, as further described on Schedule 1.80.

1.81 "**V134444 IND**" means the IND for Licensor's V134444 product, as further described on Schedule 1.81.

1.82 "Valid Claim" means (a) an issued claim of any issued patent within a patent that has not expired, or been revoked, cancelled, become abandoned or disclaimed, been declared invalid and/or unenforceable by a patent office or a decision or judgment of a court or other appropriate body of competent jurisdiction; and (b) a claim included in a pending patent application that is being prosecuted in good faith and that has not been cancelled, withdrawn from consideration, finally determined to be unallowable by the patent office or applicable governmental authority (from which no appeal is or can be taken), or abandoned or disclaimed.

1.83 "Withholding Tax Action" means an assignment of all or any portion of this Agreement by Licensee, change of control of Licensee, change of jurisdiction of payments by Licensee, or change of domicile by Licensee that causes a withholding Tax obligation to arise or which increases a withholding Tax obligation with respect to an amount payable to Licensor pursuant to this Agreement, except to the extent a Change of Control of Licensee or change of domicile of Licensee is caused by the direct or indirect ownership of Licensee by Licensor or any of Licensor's direct or indirect owners.

ARTICLE 2
GRANT OF RIGHTS

2.1 License Grant to Licensee.

(a) **Exclusive License**. Subject to the terms and conditions of this Agreement, Licensor hereby grants to Licensee an exclusive, royalty-bearing license, with the right to grant sublicenses (subject to the provisions of Section 2.1(d) below), in the Territory to and under the Exclusively Licensed Know-How to research, develop, make, have made, use, have used, sell, have sold, offer for sale, import and export Licensed Products in the Field.

(b) **Non-Exclusive License**. Subject to the terms and conditions of this Agreement, Licensor hereby grants to Licensee a non-exclusive, royalty-bearing license, with the right to grant sublicenses (subject to the provisions of Section 2.1(d) below), in the Territory to and under the Non-Exclusively Licensed Know-How to research, develop, make, have made, use, have used, sell, have sold, offer for sale, import and export Licensed Products in the Field.

(c) **Unblocking License**. Subject to the terms and conditions of this Agreement, Licensor hereby grants to Licensee a non-exclusive, royalty-free license in the Territory, with the right to grant sublicenses (subject to the provisions of Section 2.1(d) below), under the Licensor Improvements to research, develop, make, have made, use, have used, sell, offer for sale, import and commercialize Licensed Products in the Field. Notwithstanding the foregoing license grant, Licensor shall have no obligations to transfer to Licensee any such Licensor Improvements.

(d) **Sublicenses**. Each sublicense granted pursuant to Section 2.1 shall refer to and be subordinate to this Agreement and, except to the extent the Parties may otherwise agree in writing, any sublicense must be consistent in all material respects with the terms and conditions of this Agreement. Licensee shall remain responsible for the performance of Related Parties hereunder. Licensee shall provide to Licensor copies of all sublicenses, provided that Licensee shall have the right to redact commercially sensitive information (including financial and technical information) from such copies. Information regarding the scope of the license grants, territory and/or term of such sublicense shall not be considered commercially sensitive. Sublicenses of rights under Section 2.1(c) may not be granted without Licensor's prior written consent, which consent shall not be unreasonably withheld, conditioned, or delayed. To the extent consent is granted by Licensor for a sublicense under Section 2.1(c), the first three sentences of Section 2.1(d) shall apply to such sublicense.

2.2 No Implied Licenses. Except as expressly set forth in this Agreement, neither Party grants any licenses under its intellectual property rights to the other Party, including, in the case of Licensor, the grant to Licensee of a license to any compounds or products other than a Compound and Licensed Products.

ARTICLE 3
COMPENSATION

3.1 [Reserved]

3.2 Milestone Payments.

(a) **Development Milestones**. In partial consideration of the rights granted hereunder, Licensee will make milestone payments to Licensor based on the first achievement of the following development milestone events by Licensee or its Related Parties. Licensee will notify Licensor in writing of the achievement of each of the development milestone events listed below and pay to Licensor the amounts set forth below within [***] after achievement of the relevant milestone event for a Licensed Product by Licensee or its Affiliate or, if applicable, within [***] after Licensee is notified of the achievement of the relevant milestone event for a Licensed Product by a Sublicensee. Each of the following milestone payments will be payable only once and solely with respect to the first Licensed Product in the Territory to achieve each such milestone. The maximum total amount of payment to Licensor pursuant to this Section 3.2(a) shall be [***]. Each milestone payment will be nonrefundable and not creditable against any other payments due under this Agreement.

Development Milestone Events	Payment Amount
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

(b) **Sales Milestones**. In partial consideration of the rights granted hereunder, Licensee will make milestone payments to Licensor on achievement of the following sales milestone events by Licensee or its Related Parties. Licensee will notify Licensor in writing of the achievement of each of the sales milestone events listed below and pay to Licensor the amounts set forth below within [***] of Licensee's or its Affiliate's achievement of the relevant milestone event, or, if achievement is dependent upon notification by or reports from a Sublicensee, then within [***] after Licensee has been notified of the achievement of the relevant milestone event by a Sublicensee or received the necessary reports from its Sublicensees to determine whether such achievement has occurred. Each of the following milestone payments will be payable only once and solely with respect to the first Licensed Product in the Territory to reach each such milestone. The maximum total amount of payment to Licensor pursuant to this Section 3.2(b) shall be [***]. Each milestone payment will be nonrefundable and not creditable against any other payments due under this Agreement.

Sales Milestone Events for Licensed Products	Payment Amount
First Commercial Sale of a Licensed Product in [***]	[***]
Worldwide aggregate Net Sales of all Licensed Products in a Calendar Year exceeds [***]	[***]
Worldwide aggregate Net Sales of all Licensed Products in a Calendar Year exceeds [***]	[***]
Worldwide aggregate Net Sales of all Licensed Products in a Calendar Year exceeds [***]	[***]

3.3 Equity; Board Representation.

(a) **Mandatory Series B Preferred Stock Issuance**. Subject to and upon the terms and conditions of this Agreement, Licensee shall issue and sell to Licensor, and Licensor shall purchase from Licensee, [***] of Licensee's duly authorized and validly issued shares of Series B Preferred Stock at the closing of a Qualified Financing (other than an IPO) occurring before the Qualified Financing Date on substantially the same terms and conditions as offered to other purchasers of Series B Preferred Stock in such Qualified Financing. Licensor shall, as a condition to such issuance and sale, become a party to a stock purchase agreement, voting agreement, right of first refusal and co-sale agreement, and investors' rights agreement (collectively, such agreements other than such stock purchase agreement, the "**Series B Preferred Stock Transaction Agreements**") with Licensee and the other purchasers of Series B Preferred Stock in such Qualified Financing on substantially the same terms and conditions as such other purchasers, provided that any information and inspection rights of Licensor may be qualified by reasonable and customary provisions relating to competitors of Licensee and provided further that any right of Licensor to transfer the Shares to any person or entity that is a competitor of Licensee, or is an Affiliate of a competitor of Licensee, shall require the consent of the Board, which may be conditioned on reasonable and customary terms. In the event that immediately following the closing of the purchase of Series B Preferred Stock by Licensor in accordance with this Section 3.3(a) the Series B Preferred Stock purchased by Licensor would represent less than [***] of Licensee's outstanding capital stock on a Fully Diluted Basis, Licensee shall issue to Licensor at such closing of the Qualified Financing, for no additional consideration, such additional

number of shares of Series B Preferred Stock such that the shares of Series B Preferred Stock purchased by Licensor plus such additional number of shares of Series B Preferred Stock would then represent in the aggregate [***] of Licensee's outstanding capital stock on a Fully-Diluted Basis, as calculated after giving effect to such anti-dilutive issuance. All shares of Series B Preferred Stock issued to Licensor pursuant to Section 3.3(c) shall become subject to the terms and conditions of the Series B Preferred Stock Transaction Agreements.

(b) **Series A Preferred Stock Issuance**. In the event that a Qualified Financing has not occurred before the Qualified Financing Date (and Licensor has not sent and does not send a notice of termination under Section 9.2(c)), Licensor shall have the right, but not the obligation, to purchase from Licensee, for the sum of [***], a number of shares of Licensee's duly authorized and validly issued shares of Series A Preferred Stock representing in the aggregate [***] of Licensee's outstanding capital stock on a Fully-Diluted Basis, as calculated immediately following the closing of such issuance and sale (but in the case of such issuance and sale in connection with a Qualified Financing (other than an IPO), without giving effect to any issuance and sale of Series B Preferred Stock in consideration for cash investment in such Qualified Financing), on substantially the same terms and conditions (except with respect to price) as had been offered to the other purchasers of such Series A Preferred Stock at the most recent closing of the purchase of sale of Series A Preferred Stock prior to the Effective Date. Licensor may exercise such right, upon written notice of exercise to Licensee, at any time within the exercise period commencing on the Qualified Financing Date and ending on the earliest of (i) the [***] of the Qualified Financing Date, (ii) immediately prior to the closing of a Qualified Financing (other than an IPO), and (iii) [***] after Licensee files with the SEC a Form S-1 registering for sale any securities issued by Licensee or Licensee submits with the SEC a draft registration statement on Form S-1 registering for sale any securities issued by Licensee, in each case with a bona fide intention for the registration statement to become effective and to consummate the closing of an IPO, provided, however, in the case of this clause (iii), if the IPO is not consummated within [***] following the filing or submission of the Form S-1, (A) such Licensor notice of exercise shall not be binding on Licensor, (B) the exercise period shall not be terminated as a result of the operation of this clause (iii) as a result of such written notice and (C) the terms of this clause (iii) shall apply to any subsequent such filing or submission (including any amendment filed or submitted with respect to a prior filing or submission). The closing of such issuance and sale shall occur by remote exchange of documents on a Business Day and at a time reasonably chosen by Licensee, but no later than fifteen (15) Business Days after notice of exercise by Licensor, or such later date as all requisite corporate approvals of Licensee have been obtained, in the case of clauses (i) and (ii) above, and no later than [***] prior to the closing of the IPO, in the case of clause (iii) above. At the closing, Licensee shall issue and sell to Licensor such shares of Series A Preferred Stock, and Licensor shall purchase such shares of Series A Preferred Stock and, as a condition to such issuance and sale, become a party to a stock purchase agreement, voting agreement, right of first refusal and co-sale agreement, and investors' rights agreement (collectively, such agreements other than such stock purchase agreement, the "**Series A Preferred Stock Transaction Agreements**") with Licensee and the other purchasers of Series A Preferred Stock on substantially the same terms and conditions as such other purchasers, provided that any information and inspection rights of Licensor may be qualified by reasonable and customary provisions relating to competitors of Licensee and provided further that any right of Licensor to transfer the Shares to any person or entity that is a competitor of Licensee, or is an Affiliate of a competitor of Licensee, shall require the consent of the Board, which may be conditioned on reasonable and customary terms. If, in connection with the issuance and sale of Series A Preferred Stock to Licensor pursuant to this Section 3.3(b) in connection with a Qualified Financing (other than an IPO), such shares of Series A Preferred Stock purchased by Licensor in accordance with this Section 3.3(b) would represent less than [***] of Licensee's outstanding capital stock on a Fully Diluted Basis after such Qualified Financing, Licensee shall issue to Licensor at such closing of the Qualified Financing, for no additional consideration, such additional number of shares of Series A Preferred Stock such that the shares of Series A Preferred Stock purchased by Licensor plus such additional number of shares of Series A Preferred Stock would then represent in the aggregate [***] of Licensee's outstanding

capital stock on a Fully-Diluted Basis, as calculated after giving effect to such anti-dilutive issuance. All shares of Series A Preferred Stock issued to Licensor pursuant to Section 3.3(c) shall become subject to the terms and conditions of the Series A Preferred Stock Transaction Agreements. Licensee agrees that, if it is required to issue shares of Series A Preferred Stock to Licensor in accordance with the terms of this Section 3.3(b), it will take, or cause to be taken, all corporate actions required to effectuate such issuance, including required amendments to Licensee's Certificate of Incorporation, and will not issue additional shares of equity securities (other than shares issuable upon exercise of outstanding options, warrants or convertible securities) without first taking all corporate actions, and obtaining all required Board and shareholder approvals, necessary to effectuate the issuance of such shares of Series A Preferred Stock to Licensor.

(c) **Optional Series B Preferred Stock Issuance**. In the event that a Qualified Financing has not occurred before the Qualified Financing Date (and Licensor has not sent and does not send a notice of termination under Section 9.2(c)), in lieu of (and not in addition to) Licensor's right to purchase Series A Preferred Stock from Licensee pursuant to the terms of Section 3.3(b), Licensor shall have the right, but not the obligation, to purchase from Licensee at the closing of a Qualified Financing (other than an IPO), for the sum of [***], that number of shares of Licensee's duly authorized and validly issued shares of Series B Preferred Stock representing in the aggregate [***] of Licensee's outstanding capital stock on a Fully-Diluted Basis, as calculated immediately following the closing of such issuance and sale, on the same terms and conditions set forth in Section 3.3(a). Licensor may exercise such right, upon written notice of exercise to Licensee, at any time within the exercise period commencing on the Qualified Financing Date and ending on the earlier of (i) the [***] of the Qualified Financing Date, and (ii) immediately prior to the closing of a Qualified Financing (other than an IPO). All shares of Series B Preferred Stock issued to Licensor pursuant to Section 3.3(c) shall become subject to the terms and conditions of the Series B Preferred Stock Transaction Agreements. In the event that immediately following the closing of the purchase of Series B Preferred Stock by Licensor in accordance with this Section 3.3(c) the Series B Preferred Stock purchased by Licensor would represent less than [***] of Licensee's outstanding capital stock on a Fully Diluted Basis, Licensee shall issue to Licensor at such closing of the Qualified Financing, for no additional consideration, such additional number of shares of Series B Preferred Stock such that the shares of Series B Preferred Stock purchased by Licensor plus such additional number of shares of Series B Preferred Stock would then represent in the aggregate [***] of Licensee's outstanding capital stock on a Fully-Diluted Basis, as calculated after giving effect to such anti-dilutive issuance.

(d) **Additional Series X Preferred Stock Issuances**. If, at any time, after the purchase of Series X Preferred Stock by Licensor in accordance with Section 3.3(a), 3.3(b) or 3.3(c), as applicable, and prior to the first closing of the Next Financing, Licensee issues Additional Securities that would cause the Shares to represent less than [***] of Licensee's outstanding capital stock on a Fully-Diluted Basis, Licensee shall immediately issue to Licensor, for no additional consideration, such additional number of shares of the same series of Series X Preferred Stock as were purchased by Licensor (the "**Anti-Dilution Shares**") such that the Shares (calculated immediately prior to such issuance), plus the Anti-Dilution Shares would then represent in the aggregate [***] of Licensee's outstanding capital stock on a Fully-Diluted Basis, as calculated after giving effect to such anti-dilutive issuance. Licensee shall as promptly as reasonably practicable following any trigger of issuance of Anti-Dilution Shares furnish to Licensor a certificate of an executive officer certifying the calculation thereof and deliver to Licensor such Anti-Dilution Shares; provided, however, that to the extent such Additional Securities are issued pursuant to an equity incentive plan, Licensee shall provide such certificate and issue such Anti-Dilution Shares upon the earlier of (a) [***] after the end of the Calendar Quarter in which the issuances took place and (b) the closing of the next equity financing of Licensee, together with details of all Additional Securities issuances pursuant to an equity plan following the first trigger of issuances of Anti-Dilution Shares. Such issuances shall continue only up to, and immediately prior to the first closing of the Next Financing and, thereafter, no additional shares of capital stock of Licensee shall be due to Licensor pursuant to this Section 3.3(c);

provided, however that notwithstanding the foregoing or anything to the contrary elsewhere in the Agreement, any and all issuances and sales of Series B Preferred Stock at or after the first closing of the Next Financing shall be treated as having been issued and sold prior to the first closing of the Next Financing for all purposes of this Agreement. Licensee agrees that, if it is required to issue shares of Series X Preferred Stock to Licensor in accordance with the terms of this Section 3.3(c), it will take, or cause to be taken, all corporate actions required to effectuate such issuance, including required amendments to Licensee's Certificate of Incorporation, and will not issue additional shares of equity securities (other than shares issuable upon exercise of outstanding options, warrants or convertible securities) without first taking all corporate actions, and obtaining all required Board and shareholder approvals, necessary to effectuate the issuance of such shares of Series X Preferred Stock to Licensor.

(e) **Information**. In addition to Licensee's obligations pursuant to Section 3.3(c) above and any Licensee information obligations pursuant to the Series A Preferred Stock Transaction Agreements or Series B Preferred Stock Agreements, as applicable, to which Licensor may become a party, upon request, but no more frequently than [***] per Calendar Quarter, Licensee will deliver to Licensor a statement of the outstanding capital stock of Licensee on a Fully-Diluted Basis and a detailed calculation of Licensor's percentage equity ownership in Licensee. The obligation in this Section 3.3(e) shall cease upon the first closing of the Next Financing.

(f) **Board Member; SAB Member**. For so long as Licensor or an Affiliate holds of record either (i) at least [***] of the shares of Series X Preferred Stock issued to Licensor in accordance with Sections 3.3(a), 3.3(b), 3.3(c) or 3.3(d), as applicable (as adjusted for any stock split, stock dividend, combination, recapitalization or reclassification), provided that any shares issued in accordance with Section 3.3(d) that are converted to Common Stock in accordance with Section 3.3(g) shall not be considered in making the foregoing calculation of the percentage of shares of Series X Preferred Stock held of record, or (ii) at least [***] of Licensee's outstanding capital stock on a Fully-Diluted Basis, Licensor shall have the right to appoint (i) one (1) representative to serve as a voting member of the Board, subject to the provisions of this Agreement and the applicable Series A Preferred Stock Transaction Agreements or Series B Preferred Stock Agreements, as applicable, to which Licensor may become a party, and (ii) one (1) representative to serve as a member of Licensee's Scientific Advisory Board (the "**SAB**"). Such representatives shall agree to hold in confidence and trust and to act in a fiduciary manner with respect to all information provided in connection with such representation and shall, as a condition to their attendance at meetings of the Board or the SAB, as applicable, and receipt of information and materials hereunder, sign a confidentiality agreement with Licensee in such form as Licensee may reasonably request. In addition, as a condition to his or her appointment to and participation on the SAB, Licensor's designee to the SAB shall enter into a customary scientific advisory board agreement with Licensee on terms mutually agreeable to Licensee and such designee, provided that he or she will not be eligible to receive any compensation for his or her services as a member of the SAB. Licensor's Board and SAB representatives shall be entitled to and receive the same indemnification, D&O insurance, meeting attendance out-of-pocket expenses, compensation (except to the extent provided in the preceding sentence for Licensor's designee to the SAB) and other rights and benefits as other non-employee Licensee Board and SAB members.

(g) **Observer**. As of the Effective Date and until the earlier of (i) a Qualified Financing or (ii) immediately prior to the closing of the first Change of Control of Praxis, Licensee hereby agrees that Licensor may designate in writing one representative who will be entitled to attend and observe meetings of the Board in a non-voting observer capacity (the "**Observer**"). The Observer will initially be [ ], who may be replaced upon written notice by Licensor to the Licensee by a future designee of the Licensor reasonably acceptable to the Board. Praxis will provide the Observer, all notices, minutes, consents, management presentations, strategic planning materials, scientific reports, routine financial reports, and other material, financial or otherwise, that Praxis provides to the Board at the same time that such notices and materials are provided to the Board, including, for the avoidance of doubt, for ad hoc

meetings; provided that the Observer enter into Praxis' form of confidentiality agreement as mutually agreed to by Licensor. Licensor understands and agrees that the Observer may not attend any portion of a Board meeting or receive certain Board materials if, on the advice of Praxis' counsel, Observer's participation or receipt of information (i) would create an actual conflict of interest or (ii) could reasonably be expected to compromise attorney-client privilege.

(h) **Conversion of Shares**. In the event that Licensee elects to terminate this Agreement pursuant to Section 9.2(a) on account of a Safety Determination at any time during the period commencing on the earlier of (A) the closing of a Qualified Financing and (B) [***] after the Effective Date and ending on the first to occur of (X) the [***] of the Effective Date and (Y) first subject, first dosing in the first Phase 2 Clinical Trial of a Licensed Product sponsored by or on behalf of Licensee or Related Parties, the shares of Series X Preferred Stock issued pursuant to Section 3.3(d), if any, shall be converted automatically into Common Stock upon written notice by Licensee to Licensor within [***] after the effective date of such termination. Upon receipt of such notice, Licensee hereby irrevocably elects to convert such shares of Series X Preferred Stock into Common Stock in accordance with the terms of Licensee's Certificate of Incorporation. Upon receipt of such notice, Licensor shall surrender its certificate or certificates for all such shares being converted (or, if such holder alleges that any such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to Licensee to indemnify Licensee against any claim that may be made against Licensee on account of the alleged loss, theft or destruction of such certificate) to Licensee at the time and place designated in such notice. If so required by Licensee, any certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to Licensee, duly executed by Licensor or its attorney duly authorized in writing. All rights with respect to the shares of Series X Preferred Stock subject to such notice of conversion, including the rights, if any, to receive notices and vote, will terminate upon such notice (notwithstanding the failure of the holder or holders thereof to surrender any certificates for such shares), except only the rights of Licensor, upon surrender of any certificate or certificates of Licensor therefor (or lost certificate affidavit and agreement), to receive the shares of Common Stock issuable upon conversion thereof.

(i) **Termination**. The rights of Licensor set forth in Sections 3.3(d), 3.3(e), 3.3(f) and 3.3(g) and the terms of Section 3.3(h) shall terminate and be of no further force or effect (i) immediately prior to the closing of Licensee's first IPO or (ii) provided that Licensee has complied with its obligations of Section 6.3(c), immediately prior to the closing of the first Change of Control of Praxis, as Licensee hereunder, whichever event occurs first.

3.4 Royalties.

(a) **Rates**. Subject to Sections 3.4(b), 3.4(c) and 3.4(d), Licensee will pay Licensor royalties based on Net Sales of Licensed Products by Licensee and its Related Parties in a given Calendar Year during the applicable Royalty Term for such Licensed Product according to the following rates at the rate below that is applicable to the portion of aggregate Net Sales for each such Licensed Product, on a Licensed Product-by-Licensed Product basis, within each of the following Net Sales levels during such Calendar Year:

Annual Net Sales of All Licensed Products in the Territory	**Royalty Rate**
For that portion of aggregate Net Sales of a Licensed Product in a Calendar Year that is less than [***]	[***]
For that portion of aggregate Net Sales of a Licensed Product in a Calendar Year that is equal to or greater than [***], but less than or equal to [***]	[***]
For that portion of aggregate Net Sales of a Licensed Product in a Calendar Year that is greater than [***]	[***]

For example, if aggregate annual Net Sales of a Licensed Product in the Territory in a Calendar Year is [***], then royalties payable by Licensee would equal [***]. The Parties acknowledge and agree that nothing in this Agreement (including any exhibits or attachments to this Agreement) will be construed as representing an estimate or projection of either (A) the number of Licensed Products that will or may be successfully developed or commercialized or (B) anticipated sales or the actual value of any Licensed Product, and that the figures set forth in this Section 3.4 or elsewhere in this Agreement or that have otherwise been discussed by the Parties are merely intended to define the Parties' royalty payment obligations to each other in the event such sales performance is achieved.

(b) **Royalty Term**. "**Royalty Term**" means, on a country-by-country and Licensed Product-by-Licensed Product basis, the period of time beginning upon the Effective Date and ending [***] years after the First Commercial Sale of such Licensed Product in such country.

(c) **Payments under Third Party Agreements**. The Parties acknowledge that Licensor will remain solely liable for any payment obligations (including license fees, milestones or royalties) under any Third Party Agreements.

(d) **Other Royalty Provisions**. Only one royalty will be due with respect to the same unit of Licensed Product. No royalties will be due upon the sale or other transfer among Licensee and its Related Parties, but in such cases the royalty will be due and calculated upon Licensee's or its Related Parties' Net Sales to the first independent Third Party. No royalties will accrue on the sale or other disposition of Licensed Products by Licensee or its Related Parties for use in a clinical study sponsored or funded by Licensee or on the disposition of a Licensed Product in reasonable quantities by Licensee or its Related Parties as promotional samples. Any amounts awarded or received by Licensee for lost sales (including, without limitation, lost profits or reasonable royalties) (but not any other amounts awarded) as the result of an action or settlement pursuant to Section 5.2 or 5.3 shall be deemed Net Sales of Licensee.

3.5 Royalty Payment and Reports. Within the Reporting Period after the end of each Calendar Quarter after the First Commercial Sale of a Licensed Product, Licensee will deliver to Licensor a report containing the following information for the prior Calendar Quarter:

(a) the gross sales associated with each Licensed Product sold by Licensee and its Related Parties (including the number and size of units of Licensed Product sold by Licensee and its Related Parties);

(b) a calculation of Net Sales of each Licensed Product that is sold by Licensee and its Related Parties (including the amount of each of the deductions taken from gross sales);

(c) the amount of taxes, if any, withheld to comply with applicable law; and

(d) a calculation of payments due to Licensor with respect to the foregoing (including any calculation of currency conversion).

Concurrent with these reports, Licensee will remit to Licensor any payment due for the applicable Calendar Quarter. All such reports will be considered Confidential Information of Licensee and will be maintained in confidence by Licensor. If no royalties or other payments are due to Licensor for such reporting period, the report will so state. Along with the last report for a Calendar Year provided under this Article 3, Licensee will provide a final report for the entire such year.

3.6 Currency; Blocked Payments. All dollar ($) amounts specified in this Agreement are United States dollar amounts and all payments to be made under this Agreement will be made in United States dollars and will be paid by bank wire transfer in immediately available funds to such bank account in the United States as may be designated in writing by the receiving Party from time to time. In the case of sales of Licensed Products outside the United States by Licensee and its Related Parties, the rate of exchange to be used in computing the amount of currency equivalent in United States dollars due will be made at the rate of exchange as agreed and listed in the *Wall Street Journal* or *The Financial Times,* prevailing on the last day of the applicable Calendar Quarter, provided that for Net Sales made by a Sublicensee such rate of exchange shall be rate of exchange utilized by such Sublicensee, and for Net Sales made by Licensee or any Affiliate of Licensee from and after the first Change of Control of Praxis, as Licensee hereunder, such rate of exchange shall be rate of exchange utilized by Licensee, provided that in all cases such rate of exchange is one consistently applied across such person's accounting systems, and any such method is in accordance with GAAP. Licensee shall inform Licensor of any changes to its standard worldwide currency conversion methodology prior to any such changes becoming effective.

3.7 Tax Withholding. If Licensee is required applicable law to deduct or withhold income taxes upon Licensor from any payment to Licensor under this Agreement, Licensee shall make such deductions or withholdings as so required, shall pay over such amounts to the proper governmental authority on Licensor's behalf in a timely manner, and shall provide Licensor with written evidence of payment of such amounts. The applicable payment under this Agreement shall be decreased by such amounts; provided, however, if the Tax withholding is required as a result of a Withholding Tax Action, Licensee shall increase the amount of the payment due to the Licensor such that the net amount actually received by Licensor is equal to the payment due after taking into account the withholding of tax with respect to such payment and the withholding of tax with respect to any additional payment required to be made pursuant to this Section 3.7. The Parties shall reasonably cooperate with each other in order to reduce or eliminate applicable withholding tax, including by providing such forms the Parties are legally able to complete and file to qualify for the benefits of a bilateral income tax treaty.

3.8 Records and Audits. Licensee will keep, and will require all its Related Parties to keep, correct and complete books of accounts and other records containing all information and data which may be necessary to ascertain and verify the royalties payable under this Agreement. During the Term and for a period of [***] following its termination, Licensor has the right from time to time (not to exceed once during each Calendar Year, except in case of manifest error) to have an independent certified public accountant inspect such books and records of Licensee and/or its Related Parties at Licensor's expense. Such inspection will be conducted after reasonable prior notice by Licensor to Licensee during Licensee's ordinary business hours, will not be more frequent than [***] during each Calendar Year and may cover only the [***] immediately preceding the date of the audit, except in case of manifest error. Any such independent certified accountant will be reasonably acceptable to Licensee, will execute Licensee's standard form of confidentiality agreement, and will be permitted to share with Licensor solely its findings with respect to the accuracy of the royalties reported as payable under this Agreement. The independent certified accountant will report to the Parties whether there was or was not a discrepancy uncovered by the audit and, if such discrepancy was uncovered, the amount and direction of such discrepancy. If such accounting firm determines that Licensee paid Licensor less than the amount properly due in respect of any Calendar Quarter, then Licensee will reimburse Licensor such amount within [***] after such determination plus interest at the rate set forth in Section 3.8 and if the amount underpaid exceeds [***] of the amount

actually due, Licensee will also reimburse Licensor for the fees and expenses of the certified public accountant that conducted such accounting. In the event such accounting determines that Licensee paid Licensor more than the amount properly due in respect of any Calendar Quarter, then any excess payments made by Licensee will be credited against future amounts due to Licensor from Licensee, or if no such future amounts are reasonably expected to be due to Licensor from Licensee, then Licensor will reimburse Licensee promptly for any overpayment by Licensee.

3.9 Late Payments. Any amount owed by Licensee to Licensor that is not paid within the applicable time period set forth herein will accrue interest at the rate per annum equal to [***].

ARTICLE 4
TECHNOLOGY TRANSFER; REGULATORY MATTERS; DILIGENCE; NONCOMPETE

4.1 Technology Transfer and Assistance. In accordance with the technology transfer plan attached as Exhibit B to this Agreement (the "**Technology Transfer Plan**"), Licensor will provide Licensee with respect to Compounds (a) all results, tabulated data, evaluations and study reports relating solely and exclusively to Compounds and any product incorporating Compounds, including any preclinical assays, toxicity experiments, methods of synthesis, chemistry, manufacturing and controls, process research/synthesis optimization reports, analytical methods, bio-analytical methods, formulation research results, and preclinical and tabulated clinical trial data and results relating solely and exclusively Compounds or to such products, (b) all Exclusively Licensed Know-How that does not fall within the preceding clause (a), (c) all Non-Exclusively Licensed Know-How and (d) complete and correct copies of all collaborative and other agreements with Third Parties relating to the Licensed Intellectual Property, in each case in accordance with, and to the extent set forth in, the Technology Transfer Plan. Within [***], Licensor shall transfer to Licensee, in a mutually agreed manner, the quantities of available physical inventory of Compounds as listed in the Technology Transfer Plan. Licensor shall have no further obligation to make any further physical inventory of Compounds available to Licensee. Licensor will make Commercially Reasonable Efforts to complete all other transfers under the Technology Transfer Plan with respect to Compounds shall occur within [***] after the Effective Date, and Licensor shall have no further technology transfer obligations after such transfer. Without limiting the foregoing, Licensor shall have no further obligation to disclose or transfer to Licensee any Licensor Improvements that come into existence after the Effective Date. The materials transferred to Licensee by Licensor under this Section 4.1 are transferred on an "as is" basis, subject only to Licensor's express representations and warranties under this Agreement. The Compounds provided to Licensee pursuant to this Article 4 or Exhibit B are research grade and shall not be used in humans. Notwithstanding anything else in this Agreement, Licensor shall have no liability for any losses, claims, or damages arising from or related to Licensee's use of such provided Compounds. Licensor will provide reasonable assistance to Licensee for the orderly transfer and transition of all information and materials transferred to Licensee under the Technology Transfer Plan, including all research and development activities relating to Compounds and any product of Licensor incorporating Compounds in the Field to Licensee for a period not to exceed [***] after the Effective Date. For clarity, Licensor may, in its sole discretion, provide such assistance thereafter upon the request of Licensee.

4.2 Development Plan. Licensee will establish a development plan for each Licensed Product and update it [***] until the First Commercial Sale of the first Licensed Product, after which Licensee shall have no further obligation to provide such updates.

4.3 Product Advisory Committee. Licensee will also establish a product advisory committee ("**PAC**") comprised of qualified individuals who will provide product development guidance to Licensee with respect to the Licensed Products. Licensor may nominate one (1) person to the PAC, who will serve at Licensor's expense. Prior to First Commercial Sale of the first Licensed Product, Licensee will provide a written report to Licensor on an annual basis ([***] in each Calendar Year beginning with 2019) regarding

the progress of the development of the Licensed Products, including material updates to the development plan, key milestones and regulatory filings, all of which shall be deemed Licensee Confidential Information. The PAC will have no decision-making power, but Licensee will consider any recommendations from the PAC in good faith. The PAC shall be dissolved, and the rights and obligations of the Parties under this Section 4.3 shall terminate, effective upon the closing of the first Change of Control of Praxis, as License hereunder.

4.4 Regulatory Matters.

(a) **Transfer of IND and Other Regulatory Information**. Licensor shall transfer to Licensee the IND for Licensor's V134444 product. Within [***] after the Effective Date, Licensor will initiate transfer of such IND (as outlined in 21 C.F.R. § 314.72) to Licensee. Licensor agrees to send a letter(s) to the FDA to transfer such IND to Licensee, and Licensee in turn will notify the FDA that it accepts the transfer. Each Party agrees to provide the other with a copy of their respective letters of transfer. Upon transfer, Licensee will be the IND sponsor and will be responsible for all reporting and other duties of a sponsor in accordance with applicable law. As soon as reasonably practicable but not later than [***] after the Effective Date, Licensor will transfer to Licensee copies (in electronic or other format) of any regulatory information, safety and clinical databases of tabulated data and all other regulatory materials prepared or created by Licensor or its Affiliates related solely and exclusively to Compounds or any Licensed Product.

(b) **Regulatory Filings**. Licensee (or its Related Parties) will file and own all INDs, marketing authorization applications and Regulatory Approvals for Licensed Products, and any related items such as investigator's brochures or IRB approvals, in the Field and in the Territory (collectively, "**Regulatory Filings**"). Licensee will be solely responsible for all communications with regulatory authorities related to the Regulatory Filings for any Licensed Product in the Field and in the Territory.

(c) **Cooperation**. Licensor will cooperate with, and provide reasonable assistance to Licensee or its Related Parties, in the preparation and submission of any portions of any Regulatory Filings that rely upon or contain information or data in the Licensed Intellectual Property generated by or on behalf of Licensor. Licensor agrees to make its employees reasonably available to respond to inquiries from the FDA regarding Know-How that is contained in the V134444 IND and any other filings with the FDA made by or on behalf of Licensor. The obligations of Licensor under this Subsection 4.4(c) shall apply for [***] after the Effective Date. For clarity, Licensor may, in its sole discretion, provide such cooperation and assistance and make its employees reasonable available thereafter upon the request of Licensee.

4.5 Diligence. Licensee will use Commercially Reasonable Efforts to research, develop and commercialize at [***] Licensed Product in the Field in the Territory. For purposes of this Section 4.5, the efforts of Licensee's Related Parties will also be considered the efforts of Licensee.

4.6 Noncompete. During the Term, Licensor will not, and will not grant a license to any Third Party under the Licensed Intellectual Property to, research, develop or commercialize a Licensed Product in any field of use, provided that the foregoing prohibition against the granting of a license shall not apply to the extent of any pre-existing obligation to grant a license to a Third Party under the Non- Exclusively Licensed Know-How or Lapsed Patents (but not any other Exclusively Licensed Know-How) as, and to the extent, required under the terms of written license agreement relating to a compound that is not V134444 in effect as of the Effective Date (and without giving effect to any amendments thereto expanding or modifying the rights of such Third Party to or under the Non-Exclusively Licensed Know-How).

4.7 Safety Information. If at any time during the Term, Licensor becomes aware of any information concerning any safety issues, adverse experiences, or any product complaints associated with adverse experiences, related to any Compound or Licensed Product, Licensor shall, without any further inquiry, promptly provide such information to Licensee. Licensor agrees to make its employees reasonably available to Licensee for review and response to medical inquiries and complaints to which the Licensed Know-How is, or may reasonably be expected to be, relevant, for a period of [***] after the Effective Date. For clarity, Licensor may, in its sole discretion, make its employees reasonable available thereafter upon the request of Licensee.

ARTICLE 5
INTELLECTUAL PROPERTY

5.1 Ownership of Inventions. Each Party will own all Know-How developed and inventions conceived or reduced to practice solely by its employees, agents or independent contractors, including any related Patent. Although the Parties do not intend or expect to jointly develop any know-how or inventions, in the event they do so, then all inventions made jointly by employees, agents or independent contractors of each Party will be owned jointly by the Parties such that each Party has an undivided one-half interest in such inventions ("**Joint Inventions**"). All Patents claiming patentable Joint Inventions will be referred to as "**Joint Patents**". Except to the extent either Party is restricted by the rights granted to the other Party and covenants contained in this Agreement, each Party will be entitled to practice, and to grant to Third Parties or its Related Parties the right to practice, inventions claimed in a Joint Patent anywhere in the world without restriction or any requirement of gaining the consent of or of accounting to the other Party. Inventorship will be determined in accordance with United States patent laws.

5.2 Prosecution, Enforcement and Defense of Patents.

(a) **Licensee Patents**. As between Licensor and Licensee, Licensee shall have the sole and exclusive right, but not any obligation, at its expense, to prosecute, maintain and defend with respect to infringement of any Patent Controlled by Licensee that Covers the Licensed Products and is not a Joint Patent. As provided in Section 3.4(d), any amounts awarded or received by Licensee as lost profits or reasonable royalties (but not any other amounts awarded) as the result of any enforcement action shall be deemed Net Sales of Licensee.

(b) **Joint Patents**. Neither Party shall have any obligation to file or prosecute any Joint Patent. To the extent a Party wishes to prosecute a Joint Patent, the Parties will mutually agree upon which Party will have the first right to prosecute such Joint Patent, based on the contribution of each Party to such invention and each Party's potential interest in products based upon such invention. If the Party having such first right does not wish to prosecute such Joint Patent, it shall inform the other Party promptly, but in any event no later than [***] after the Parties have agreed upon which Party had the first right to prosecute such Joint Patent. If the Party having such first right does not wish to prosecute such Joint Patent, the other Party may, upon written notice to such Party, prosecute such Joint Patent. The Party that prosecutes a Joint Patent pursuant to this Section 5.2(b) (the "**prosecuting Party**") will solely bear its own internal costs for such prosecution and will solely bear the external costs for such prosecution (e.g., outside counsel, filing fees, etc.). Licensee will have the first right, but not the obligation, to prosecute infringement of any Joint Patents that is related to the Exclusively Licensed Know-How or a product competitive, or potentially competitive, with a Licensed Product; and Licensor will have the first right, but not the obligation, to prosecute infringement of any Joint Patents in all other cases. The Parties shall first confer and mutually agree regarding any such prosecution of infringement; provided, however, that Licensee shall have the right, without the consent of Licensor, to assert a Joint Patent against a Third Party in a defense of or counterclaim to any claim or assertion of infringement of a Patent or misappropriation of Know-How Controlled by such Third Party.

(c) **Lapsed Patents**. Licensor shall not take any action to revive and/or resume prosecution of the Lapsed Patents without the prior written consent of Licensee. Licensor shall not license, assign or otherwise transfer to any Third Party any of Licensor's right, title or interest in and to the Lapsed Patents. Licensor shall not license, assign or otherwise transfer to any Affiliate of Licensor any of Licensor's right, title or interest in and to the Lapsed Patents unless such Affiliate agrees in writing to all the obligations of Licensor with the respect to the Lapsed Patents as set forth herein.

5.3 Infringement of Third Party Rights. If any Licensed Product that is manufactured, used or sold by or for Licensee becomes the subject of a Third Party's claim or assertion of infringement of a Patent or misappropriation of Know-How Controlled by such Third Party, the Party first having notice of the claim or assertion will promptly notify the other Party in writing, and the Parties will promptly meet to consider the claim or assertion and the appropriate course of action. As between Licensor and Licensee, Licensee shall have the sole and exclusive right, but not the obligation, to take action to defend any such claim brought by a Third Party. Licensor will reasonably cooperate with Licensee, at Licensee's sole cost and expense, in its defense of any such Third Party claim. Nothing in this Section 5.3 will be deemed to relieve either Party of its obligations under Article 7. All costs and expenses of the defense of any such claim shall be borne by Licensee, and as provided in Section 3.4(d), any amounts recovered by Licensee related to such claim that is for lost sales (including, without limitation, lost profits or reasonable royalties) (but not any other amounts recovered) shall be deemed Net Sales of Licensee.

5.4 Other Infringement Resolutions. In the event of a dispute or potential dispute that has not ripened into a demand, claim or suit of the types described in Sections 5.2 and 5.3, the same principles governing control of the resolution of the dispute, consent to settlement of the dispute, and implementation of the settlement of the dispute (including allocating the payment or receipt of damages, license fees, royalties and other compensation) will apply.

5.5 Patent Marking. Each Party agrees to comply with the patent marking statutes in each country in which a Licensed Product containing a Compound is sold by such Party or its Related Parties.

ARTICLE 6
REPRESENTATIONS, WARRANTIES AND COVENANTS

6.1 Mutual Representations and Warranties. Each Party represents, warrants and covenants to the other Party as follows:

(a) **Corporate Existence and Power**. Such Party is a company, corporation, or general partnership duly organized, validly existing and in good standing under the laws of the jurisdiction in which it is incorporated or organized, and has full corporate or partnership power and authority and the legal right to own and operate its property and assets and to carry on its business as it is now being conducted and as contemplated in this Agreement, including the right to transfer the rights granted under this Agreement.

(b) **Authority and Binding Agreement**. As of the Effective Date, (i) it has the corporate or partnership power and authority and the legal right to enter into this Agreement and perform its obligations under this Agreement; (ii) it has taken all necessary corporate or partnership action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations under this Agreement, including all board of director approvals, qualifications, and consents required for share issuance as of the Effective Date; and (iii) this Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid and binding obligation of such Party that is enforceable against it in accordance with its terms, subject to bankruptcy, insolvency, reorganization, arrangement, winding-up, moratorium, and similar laws of general application affecting the enforcement of creditors' rights generally, and subject to general equitable principles, including the fact that the availability of equitable remedies, such as injunctive relief or specific performance, is in the discretion of the court.

(c) **No Conflict**. It has not entered, and will not enter, into any agreement with any Third Party that is in conflict with the rights granted to the other Party under this Agreement, and has not taken and will not take any action that would in any way prevent it from granting the rights granted to the other Party under this Agreement, or that would otherwise materially conflict with or materially adversely affect the rights granted to the other Party under this Agreement. Its performance and execution of this Agreement does not and will not result in a material breach of any other contract to which it is a party.

6.2 Licensor Representations. Licensor represents, warrants and covenants to Licensee as follows as of the Effective Date:

(a) **Lapsed Patents; Third Party Agreements**. To Licensor's knowledge, without any investigation or independent inquiry, the Lapsed Patents constitute all of the Patents and abandoned patent applications or patents owned or Controlled by Licensor that Cover a Compound or any Licensed Product (assuming for this purpose that such Licensed Product does not contain any other ingredient other than a Compound), or their manufacture or use in the Field, there are no Third Party Agreements of Licensor granting rights in the Lapsed Patents to any Third Party, and none of the Licensed Intellectual Property is subject to any claim of Control by any Third Party

(b) **Ownership**. Licensor is the sole and exclusive owner of all right, title and interest in and to the Licensed Intellectual Property, the Licensed Intellectual Property is free and clear of any material liens, charges and encumbrances, except for any purchase money security interest, liens for taxes, assessments or governmental or other similar charges or levies that are not yet due and payable or that, although due and payable, are being contested in good faith. To Licensor's knowledge, without any investigation or independent inquiry, there are no Third Party Agreements pursuant to which Licensor obtained any rights or licenses in or to the Licensed Intellectual Property that would impose any obligations, including obligations relating to the payment of any milestones, royalties or other fees or charges, with respect to the Compounds or Licensed Products that may be researched, developed or commercialized by Licensee or its Related Parties in accordance with the terms of this Agreement. Licensor has no knowledge, without any investigation or independent inquiry, of any claim made against it challenging Licensor's Control of the Licensed Intellectual Property or making any adverse claim of ownership of the Licensed Intellectual Property.

(c) **Additional Agreements**. To Licensor's knowledge, without any investigation or independent inquiry, listed on Exhibit C are all sponsored research agreements, material transfer agreements, or similar agreements existing as of the Effective Date between Licensor and Third Parties pursuant to which Licensor has granted to any Third Party rights in any Compound, Licensed Products or Licensed Intellectual Property (other than any Non-Exclusively Licensed Know-How) or obtained from any Third Party any material rights and/or assumed any material obligations with respect to any Compound, Licensed Products or Licensed Intellectual Property (other than any Non-Exclusively Licensed Know-How) (the "**Additional Agreements**"). Prior to the Effective Date Licensor has disclosed and/or provided to Licensee true, complete and correct copies of all such Additional Agreements.

(d) **Non-Infringement of Third Party Rights**. To Licensor's knowledge, without any investigation or independent inquiry, no claim of infringement of the Patents of any Third Party has been made against Licensor or any of its Affiliates, and Licensor has not received any cease and desist letter or other formal written notice of infringement, with respect to the development, manufacture, sale or use of Licensed Products. To Licensor's knowledge, without any investigation or independent inquiry, there are

no other claims, judgments or settlements against or owed by Licensor or to which Licensor is a party or pending, in each case relating to any Licensed Product. To Licensor's knowledge, without any investigation or independent inquiry, neither Licensor nor any of its Affiliates or their respective current or former employees has misappropriated any of the Exclusively Licensed Know-How or Non- Exclusively Licensed Know-How from any Third Party, and Licensor has no knowledge, without any investigation or independent inquiry, of any claim by a Third Party that such misappropriation has occurred.

(e) **Licensor Improvements**. To Licensor's knowledge, without any independent inquiry, there are no Licensor Improvements in existence as of the Effective Date.

6.3 Licensee Covenants and Representations.

(a) Licensee hereby covenants to Licensor that it shall notify Licensor promptly in writing of Licensee's becoming aware of any drug-related serious adverse event that arises during the Term in connection with the administration of any Licensed Product. All such notices (and any information related thereto) will be considered Confidential Information of Licensee and will be maintained in confidence by Licensor.

(b) Licensee hereby covenants to Licensor that Licensee shall not sell any equity security senior in liquidation to the Common Stock prior to the earlier of (i) the closing of a Qualified Financing or (ii)the issuance to Licensor of shares of Series A Preferred Stock as contemplated in Section 3.3(b). Licensee shall notify Licensor promptly, but in no event fewer than [***] prior to the anticipated closing of a Qualified Financing (other than an IPO), and in no event fewer than [***] prior to the closing of a Qualified Financing that is an IPO.

(c) Licensee hereby covenants to Licensor that Licensee shall not close any Change of Control prior to the earlier of (i) the closing of a Qualified Financing or (ii) the issuance to Licensor of shares of Series A Preferred Stock on the same terms as is contemplated in Section 3.3(b).

(d) Licensee hereby covenants that it shall not use any physical inventory of Compounds received from Licensor hereunder in humans.

The covenants set forth in Sections 6.3(b) and 6.3(c) shall expire and be of no further force or effect from and after the closing of the first Change of Control of Praxis, as License hereunder, provided that Licensee has complied with such covenants prior to the fist Change of Control of Praxis.

(e) **Capitalization Representation**. Licensee represents and warrants to Licensor that, consistent with the capitalization table of Licensee attached as Exhibit D, the authorized capital of Licensee as of the Effective Date consists of : (I) [***] shares of Common Stock, [***] shares of which are issued and outstanding, and (II) [***] shares of preferred stock, all of which shares have been designated Series A Preferred Stock, all of which shares are issued and outstanding. Licensor further represents and warrants to Licensor that all of the issued and outstanding shares of capital stock have been duly authorized, are fully paid and nonasessable and were issued in compliance with all applicable federal and state securities laws. Licensee has reserved [***] shares of Common Stock for issuance pursuant to equity incentive plans, of which [***] shares are subject to outstanding options, [***] shares remain available for issuance and [***] shares have been issued subject to restricted stock agreements.

6.4 Obligations with respect to Third Party Agreements. Licensor shall, upon written request of Licensee, assign to Licensee such of the Additional Agreements as may be requested by Licensee, subject to the terms and conditions of such Additional Agreements. Licensor is solely liable for any payment obligations (including license fees, milestones or royalties) under any Additional Agreements prior to such assignment.

6.5 No Other Representations. THE EXPRESS REPRESENTATIONS AND WARRANTIES STATED IN THIS ARTICLE 6 ARE IN LIEU OF ALL OTHER REPRESENTATIONS AND WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OR NON-MISAPPROPRIATION OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS. EACH PARTY DISCLAIMS ANY REPRESENTATION OR WARRANTY THAT THE DEVELOPMENT, MANUFACTURE OR COMMERCIALIZATION OF ANY LICENSED PRODUCT PURSUANT TO THIS AGREEMENT WILL BE SUCCESSFUL OR THAT ANY PARTICULAR SALES LEVEL WITH RESPECT TO A LICENSED PRODUCT WILL BE ACHIEVED.

ARTICLE 7
INDEMNIFICATION AND INSURANCE

7.1 Indemnification by Licensee. Licensee will defend, hold harmless, and indemnify (collectively, "**Indemnify**") Licensor and its Affiliates and their respective agents, directors, officers and employees (the "**Licensor Indemnitees**") from and against any and all liabilities, expenses, and/or losses, including reasonable legal expenses and attorneys' fees (collectively "**Losses**") in each case resulting from Third Party suits, claims, actions and demands (each, a "**Third Party Claim**") to the extent arising from or related to (a) a breach of any representation, warranty, covenant or other obligation of Licensee set forth in this Agreement, or (b) the research, development, manufacture or commercialization of Licensed Products by Licensee or its Related Parties, except, in each case, to the extent such Losses arises from or is related to (A) any act or omission of any Licensor Indemnitee or any Third Party acting on behalf of a Licensor Indemnitee with respect to a Compound, or any product containing a Compound, prior to the Effective Date, (B) a breach of any representation, warranty, covenant or other obligation of Licensor set forth in this Agreement or (C) the gross negligence or willful misconduct of a Licensor Indemnitee.

7.2 Procedure. To be eligible to be indemnified under Section 7.1, as applicable, Licensor will provide Licensee with prompt notice of the claim giving rise to the indemnification obligation pursuant to this Article 7 and the exclusive ability to defend (with the reasonable cooperation of the Licensor) or settle any such claim; provided, however, that Licensee will not enter into any settlement for damages other than monetary damages without Licensor's prior written consent, such consent not to be unreasonably withheld, conditioned, or delayed. Licensor has the right to participate, at its own expense and with counsel of its choice, in the defense of any claim or suit that has been assumed by Licensee. Licensor reserves the right to claim indemnity from Licensee accordance with Section 7.1 upon resolution of the underlying claim, notwithstanding the provisions of this Section 7.2 requiring Licensor to tender to Licensee the exclusive ability to defend such claim or suit.

7.3 Limitation of Liability. NEITHER PARTY WILL BE LIABLE UNDER ANY LEGAL THEORY (WHETHER TORT, CONTRACT OR OTHERWISE) FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES ARISING OUT OF OR RELATED TO THIS AGREEMENT OR THE EXERCISE OF ITS RIGHTS UNDER THIS AGREEMENT, INCLUDING LOST PROFITS ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, REGARDLESS OF ANY NOTICE OF SUCH DAMAGES, EXCEPT AS A RESULT OF A BREACH OF THE CONFIDENTIALITY AND NON-USE OBLIGATIONS IN ARTICLE 8. NOTHING IN THIS SECTION 7.3 IS INTENDED TO LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY.

7.4 Insurance. Licensee will maintain insurance during the Term of this Agreement and for a period of at least two (2) years thereafter with a reputable, solvent insurer (carrier rating of AM Best A- VII (or equivalent or better) in at least the following amounts: (a) product liability insurance with limits of liability not less than [***]; and (b) clinical trial liability insurance with limits of liability not less than [***]. Licensee will provide Licensor with evidence of the existence and maintenance of such insurance coverage. Notwithstanding the foregoing to the contrary, after the first Change of Control of Praxis, as Licensee hereunder, Licensee shall not be required to maintain such insurance if it maintains a reasonable and customary program of self-insurance that covers the liabilities and risks described in the foregoing clauses (a) and (b).

ARTICLE 8
CONFIDENTIALITY AND PUBLICITY

8.1 Confidential Information. Each Party agrees (a) to take all steps reasonably necessary to maintain the confidentiality of the Confidential Information of the other Party, (b) not to disclose the other Party's Confidential Information to any Third Party without the prior written consent of such other Party, and (c) to use such Confidential Information only as necessary to fulfill its obligations or in the reasonable exercise of rights granted to it under this Agreement; provided, however, that the foregoing obligations will not apply to Confidential Information that (i) is in possession of the receiving Party at the time of disclosure, as reasonably demonstrated by written records and without obligation of confidentiality, (ii) later becomes part of the public domain through no fault of the receiving Party, (iii) is received by the receiving Party without obligation of confidentiality from a Third Party with a right to such information, or (iv) is developed independently by the receiving Party without use of, reference to, or reliance upon the disclosing Party's Confidential Information by individuals who did not have access to such Confidential Information. Furthermore, a Party may disclose Confidential Information of the other Party to (x) its Affiliates, and to its and their directors, employees, consultants, agents, and insurers, in each case who have a specific need to know such Confidential Information and who are bound by obligations of confidentiality and restriction on use no less stringent than those set forth herein, (y) any bona fide actual or prospective collaborators, licensees, underwriters, investors, lenders or other financing sources who are obligated to keep such information confidential, to the extent reasonably necessary to enable such actual or prospective collaborators, licensees, underwriters, investors, lenders or other financing sources to determine their interest in collaborating with, licensing from, underwriting or making an investment in, or otherwise providing financing to, the receiving Party, and (z) the extent such disclosure is required to comply with applicable law or regulation or the order of a court of competent jurisdiction, to defend or prosecute litigation or to comply with the rules of the U.S. Securities and Exchange Commission, any stock exchange or listing entity; provided, however, that the receiving Party provides prior written notice of such disclosure to the disclosing Party and takes reasonable and lawful actions to avoid or minimize the degree of such disclosure. Notwithstanding any other provision of this Agreement, each Party may disclose and use Confidential Information of the other Party as necessary to file or prosecute patent applications, prosecute or defend litigation or otherwise establish rights or enforce obligations under this Agreement, or to submit Regulatory Filings. Moreover, Licensee may disclose Confidential Information of Licensor relating to the research, development or commercialization of Licensed Products to entities with whom Licensee has (or may have) a license, collaboration agreement, marketing agreement, development agreement and/or commercialization agreement and who have a need to know such Confidential Information and who are bound by obligations of confidentiality and restrictions on use no less stringent than those set forth herein. The obligations of this Section 8.1 shall survive for [***] after the Term.

8.2 Publicity. Each Party understands that this Agreement is likely to be of significant interest to investors, analysts and others and, therefore, that either Party has the right to make announcements of events or developments with respect to this Agreement that are material to such Party. Each Party agrees that any such announcement will not contain Confidential Information of the other Party or, if disclosure

of such Confidential Information is required by law or regulation or the rules of the U.S. Securities and Exchange Commission, any stock exchange or listing entity, will make reasonable efforts to minimize such disclosure and obtain confidential treatment for any such information that is disclosed to a government agency. Each Party agrees to provide the other Party with a copy of any such public announcement as soon as reasonably practicable prior to its scheduled release. Except in the case of extraordinary circumstances, each Party will provide the other with an advance copy of any such public announcement at least [***] prior to its scheduled release. Each Party has the right to expeditiously review and recommend changes to any such public announcement regarding this Agreement, provided that such right of review and recommendation will only apply for the first time that specific information is disclosed and will not apply to the subsequent disclosure of substantially similar information that has been previously disclosed.

8.3 Publications. Licensee may publish or present the results of research and development of Licensed Product(s), without restriction or any prior review or approval by Licensor, provided that Licensee notifies Licensor of such publication or presentation [***] in advance of such publication or presentation if such publication or presentation contains any Confidential Information of Licensor.

8.4 Prior Confidentiality Agreement. This Article 8 supersedes the prior letter agreement between the Parties regarding the Prior Confidentiality Agreement, with respect to disclosures of or discussions regarding Confidential Information taking place after the Effective Date.

ARTICLE 9
TERM AND TERMINATION

9.1 Term. This Agreement will become effective on the Effective Date and unless earlier terminated pursuant to this Article 9, will remain in effect until the expiration of the last-to-expire Royalty Term for a Licensed Product (the "**Term**"). Thereafter, the rights granted under Article 2 will become fully-paid, perpetual and irrevocable.

9.2 Elective Termination.

(a) Licensee has, at any time, the right to terminate this Agreement at will in its entirety upon [***] prior written notice to Licensor, if such notice is given prior to the Qualified Financing Date, or upon [***] prior written notice to Licensor, if such notice is given on or after the Qualified Financing Date. Notwithstanding the foregoing, any such notice of termination of this Agreement shall (i) result in Licensor being able to exercise its right to purchase Series A Preferred Stock pursuant to Section 3.3(b) even if the Qualified Financing Date has not occurred, and (ii) not in any way prevent Licensor from exercising or receiving any of its rights under Sections 3.3(a), 3.3(b), 3.3(c) or 3.3(d) prior to the effective date of any such termination, and Licensor shall carry out the provisions of this Agreement in order to protect the exercise of any rights of Licensor hereunder. If Licensee is terminating this Agreement pursuant to this Section 9.2(a) on account of a Safety Determination, the applicable notice of termination shall explicitly state that such termination is on account of a Safety Determination.

(b) Licensor has, at any time, the right to terminate this Agreement at will upon [***] notice, provided however, that in the event of such termination, Licensee's license rights granted under Article 2 shall survive such termination, and such rights shall become fully-paid, perpetual and irrevocable.

(c) In the event that a Qualified Financing has not occurred on or before the Qualified Financing Date, Licensor has the right to terminate this Agreement in its entirety, upon [***] prior written notice to Licensee, at any time prior to the earlier of (i) the expiration of [***] after the Qualified Financing Date and (ii) the exercise by Licensor of its right to purchase Series A Preferred Stock or Series B Preferred Stock in accordance with Section 3.3(b) or Section 3.3(c); provided, however, that such termination shall not be effective if prior to the effectiveness of such termination, a Qualified Financing occurs or Licensor's rights to purchase shares of Series A Preferred Stock and Series B Preferred Stock in accordance with Sections 3.3(b) and 3.3(c) expire.

9.3 Termination for Breach. If either Party believes that the other is in material breach of this Agreement, then the Party holding such belief (the "**Non-Breaching Party**") may deliver notice of such breach to the other Party (the "**Notified Party**"). The Notified Party will have (a) [***] to cure such breach to the extent involving non-payment of amounts due under Article 3; and (b) [***] to either cure such breach for all other material breaches, or, if cure of such breach other than non-payment cannot reasonably be effected within such [***] period, to deliver to the Non-Breaching Party a plan reasonably calculated to cure such breach within a timeframe that is reasonably prompt in light of the circumstances then prevailing, but in any event within a timeframe that is not longer than [***]. Following delivery of such a plan, the Notified Party will carry out the plan and cure the breach. If the Notified Party fails to cure a material breach of this Agreement as provided above, then the Non-Breaching Party may terminate this Agreement upon written notice to the Notified Party. If there is a good faith dispute as to the existence or cure of a breach or default pursuant to this Section 9.3, all applicable cure periods will be tolled during the existence of such good faith dispute and no termination for a breach that is disputed in good faith will become effective until such dispute is resolved. The Parties agree that, if Licensee fails to undertake development activities with respect to a Licensed Product for a period of [***] or longer, then such failure shall be a material breach permitting Licensor to terminate the Agreement subject to the notice requirement and cure period of this Section 9.3, even if Licensee has not during such time failed to comply with Section 4.4 hereof; provided, however, that the rights and obligations set forth in this sentence shall terminate and be of no further force or effect immediately upon the closing of the first Change of Control of Praxis, as Licensee hereunder.

9.4 Termination for Bankruptcy.

(a) This Agreement may be terminated by Licensor upon the filing or institution of bankruptcy, reorganization, liquidation or receivership proceedings, or upon an assignment of a substantial portion of the assets for the benefit of creditors by Licensee; provided, however, that in the event of any involuntary bankruptcy or receivership proceeding such right to terminate will only become effective if Licensee consents to the involuntary bankruptcy or receivership or such proceeding is not dismissed within [***] after the filing of such bankruptcy or receivership.

(b) All licenses and rights to licenses granted under or pursuant to this Agreement by Licensor to Licensee are, and will otherwise be deemed to be, for purposes of Section 365(n) of the United States Bankruptcy Code (the "**Bankruptcy Code**"), licenses of rights to "intellectual property" as defined under Section 101(35A) of the Bankruptcy Code. The Parties agree that Licensee, as a licensee of such rights under this Agreement, will retain and may fully exercise all of its rights and elections under the Bankruptcy Code. The Parties further agree that that upon commencement of a bankruptcy proceeding by or against Licensor under the Bankruptcy Code, Licensee will be entitled to a complete duplicate of, or complete access to (as Licensee deems appropriate), all such intellectual property and all embodiments of such intellectual property. Such intellectual property and all embodiments of such intellectual property will be promptly delivered to Licensee (i) upon any such commencement of a bankruptcy proceeding and upon written request by Licensee, unless Licensor elects to continue to perform all of its obligations under this Agreement, or (ii) if not delivered under (i) above, upon the rejection of this Agreement by or on behalf of Licensor and upon written request by the Licensee. Licensor (in any capacity, including debtor-in-possession) and its successors and assigns (including any trustee) agrees not to interfere with the exercise by Licensee or its Affiliates of its rights and licenses to such intellectual property and such embodiments of intellectual property in accordance with this Agreement, and agrees to assist Licensee and its Affiliates in obtaining such intellectual property and such embodiments of intellectual property in the possession or control of Third Parties as reasonably necessary or desirable for Licensee to exercise such rights and licenses in accordance with this Agreement. The foregoing provisions are without prejudice to any rights Licensee may have arising under the Bankruptcy Code or other applicable law.

9.5 Consequences of Termination.

(a) Upon any termination of this Agreement under Sections 9.2, 9.3 or 9.4, all rights and obligations of the Parties shall terminate except as provided in Sections 9.2(b), 9.5(b) and 9.6.

(b) In the event that the license granted to Licensee under this Agreement is terminated, any granted sublicenses will remain in full force and effect; provided that the Sublicensee is not then in breach of its sublicense agreement and the Sublicensee agrees to be bound to Licensor as a licensor under the terms and conditions of the sublicense agreement. Licensor will enter into appropriate agreements or amendments to the sublicense agreement to substitute itself for Licensee as the licensor under such agreement, provided that Licensor shall not be obligated to take on any obligations of Licensee under such agreement that are greater in scope or duration to those obligations set forth in this Agreement.

(c) Upon any termination of this Agreement by Licensee under Section 9.2(a) or by Licensor under Section 9.2(c), 9.3 or 9.4, Licensee shall, at Licensor's election, promptly transfer to Licensor all Regulatory Filings related to the Licensed Products, all non-clinical and clinical data related to the Licensed Products and all inventories of Licensed Products (to be provided at Licensee's cost of such inventories), in each case, and that is in the possession or Control of Licensee or its Affiliates. The provisions of this Section 9.5(c) shall terminate and be of no further force or effect immediately upon the closing of the first Change of Control of Praxis, as Licensee hereunder.

9.6 Survival. The following provisions will survive any expiration or termination of this Agreement for the period of time specified in such provision, or if not specified, then they will survive indefinitely: Articles 1, 2 (solely in the case of expiration in accordance with Section 9.1 or termination by Licensor pursuant to Section 9.2(b)), 7, 8, 9, 10 and 11, and Sections 3.5 (solely for so long as required to make a final report of Net Sales of Licensed Products that occur prior to expiration or termination and to make any final payments hereunder as a result thereof), 3.3(d) (solely as to Licensee's rights to receive Anti-Dilution Shares upon any issuance and sale of Series B Preferred Stock at or after the Next Financing), 3.6, 3.7, 3.8, 3.9, 5.1, 5.3, and 5.4. Termination of this Agreement will not relieve the Parties of any liability which accrued under this Agreement prior to the effective date of such termination nor preclude either Party from pursuing all rights and remedies it may have under this Agreement or at law or in equity with respect to any breach of this Agreement. The remedies provided in this Article 9 are not exclusive of any other remedies a Party may have in law or equity.

ARTICLE 10
DISPUTE RESOLUTION

10.1 Dispute Resolution. If the Parties are unable to resolve any dispute arising out of or in connection with this Agreement (each a "**Dispute**"), either Party may, by written notice to the other, have such Dispute referred to senior executive officers designated by each Party, or their respective designees for attempted resolution by good faith negotiations within [***] after such notice is received. In such event, the Parties shall cause their respective officers or their designees to meet (face-to-face or by teleconference) and be available to attempt to resolve such issue. If the Parties should resolve such Dispute, a memorandum setting forth their agreement shall be prepared and signed by both Parties at either Party's request. If the Parties are unable to resolve any Dispute, either Party may submit the matter for resolution pursuant to Section 10.2.

10.2 Arbitration.

(a) If any Dispute has not been resolved pursuant to the provisions of Section 10.1, then the Parties shall settle the Dispute by binding arbitration administered by JAMS, Inc., the alternative dispute resolution company formerly known as Judicial Arbitration and Mediation Services, Inc., pursuant to its Comprehensive Arbitration Rules and Procedures then in effect (the "**JAMS Rules**"), and judgment on the arbitration award may be entered in any court having jurisdiction thereof; provided, however, and notwithstanding anything to the contrary, that any Dispute concerning ownership or assignment of intellectual property rights, or the infringement, validity or enforceability of any Patent Right shall be heard exclusively by a federal court of competent jurisdiction in accordance with Section 11.2 and no finding, opinion or judgment by any arbitrator with respect to such matters shall be enforceable or have any legal effect as between the Parties.

(b) The arbitration shall be conducted by a panel of three (3) arbitrators experienced in the business of biopharmaceuticals. If the issues in dispute involve scientific, technical or commercial matters, then any arbitrator chosen under this Agreement shall have educational training and industry experience sufficient to demonstrate a reasonable level of relevant scientific, technical and commercial knowledge as applied to the biopharmaceutical industry. If the issues in dispute involve patent matters, but subject to the proviso in Section 10.2(a), then at least two (2) of the arbitrators shall be licensed patent attorneys. Within thirty (30) days after a Party demands arbitration, each Party shall select one person to act as arbitrator, and the two Party-selected arbitrators shall select a third arbitrator within thirty (30) days after their own appointment. If the arbitrators selected by the Parties are unable or fail to agree upon the third arbitrator, then the third arbitrator shall be appointed in accordance with the JAMS Rules. The location of arbitration shall be New York, New York. All proceedings and communications as part of the arbitration shall be in English. Following selection of the third arbitrator, the arbitrators shall complete the arbitration proceedings and render an award pursuant to a written decision within six (6) months after the last arbitrator is appointed.

(c) Each Party shall bear its own costs and expenses and attorneys' fees and an equal share of the arbitrators' fees and any administrative fees for arbitration, unless in each case the arbitrators agree otherwise, which they are hereby empowered, authorized and instructed to do if they determine that to be fair and appropriate.

(d) The decision of the arbitrators shall be the sole, exclusive and binding remedy between the Parties regarding the determination of all Disputes presented. The arbitrators shall have the authority to grant specific performance. Judgment upon the award so rendered may be entered in a court having jurisdiction or application may be made to such court for judicial acceptance of any award and an order of enforcement, as the case may be. Any monetary payment to be made by a Party pursuant to a decision of the arbitrators shall be made in US Dollars, free of any tax or other deduction. Notwithstanding anything to the contrary in this Agreement, each Party shall have the right at any time to seek injunctive or other forms of equitable relief from any court of competent jurisdiction.

ARTICLE 11
MISCELLANEOUS

11.1 Entire Agreement; Amendment. This Agreement, including the Exhibits attached to and incorporated into this Agreement, sets forth the complete, final and exclusive agreement and all the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties with respect to the subject matter of this Agreement and supersedes and terminates all prior agreements and understandings between the Parties with respect to such subject matter, other than the Prior Confidentiality Agreement which shall continue in full force and effect with respect to disclosures of the Parties prior to the Effective Date. No subsequent alteration, amendment, change or addition to this Agreement will be binding upon the Parties unless reduced to writing and signed by an authorized officer of each Party.

11.2 Governing Law. This Agreement will be construed in accordance with, and governed in all respects by, the laws of the state of Delaware (without giving effect to principles of conflicts of laws that would require the application of any other law); provided that matters of intellectual property law will be determined in accordance with the United States federal law. The Parties hereby submit to the jurisdiction of the state and federal courts located in New Castle County, Delaware, and waive any defense of inconvenient forum to the maintenance of any action or proceeding in such courts.

11.3 Specific Performance. Subject to Article 10 and Section 11.2, in addition to any and all other remedies that may be available at law in the event of breach of this Agreement, the non-breaching Party shall be entitled to specific performance of the agreements and obligations of the breaching Party hereunder and to such injunctive or other equitable relief as may be granted by a court of competent jurisdiction.

11.4 Force Majeure. Each Party will be excused from the performance of its obligations under this Agreement to the extent that such performance is prevented by a *force majeure* event and the nonperforming Party promptly provides notice of the prevention to the other Party. Such excuse will be continued so long as the condition constituting *force majeure* continues and the nonperforming Party uses reasonable efforts to remove the condition. For purposes of this Agreement, *force majeure* will include conditions beyond the reasonable control of the Parties, including an act of God or terrorism, voluntary or involuntary compliance with any regulation, law or order of any government, war, civil commotion, labor strike or lock-out, epidemic, failure or default of public utilities or common carriers, destruction of production facilities or materials by fire, earthquake, storm or like catastrophe.

11.5 Notices. Any notice required or permitted to be given under this Agreement will be in writing, will specifically refer to this Agreement and will be deemed to have been sufficiently given for all purposes upon receipt if delivered (a) by first class certified or registered mail, postage prepaid, (b) international express delivery service or (c) personally. Unless otherwise specified in writing, the notice addresses of the Parties will be as described below.

For Licensee:	Praxis Precision Medicines, Inc. 101 Main Street, Suite 1210 Cambridge, MA 02142 Attention: Chief Executive Officer
With a copy to:	Goodwin Procter LLP 100 Northern Avenue Boston, MA 02210 Attn: Richard Hoffman
For Licensor:	Purdue Neuroscience Company One Stamford Forum 201 Tresser Boulevard Stamford, Connecticut 06901-3431 Attention: Paul Medeiros and Don Kyle

With copies to: Purdue Pharma L.P.
One Stamford Forum
201 Tresser Boulevard
Stamford, Connecticut 06901-3431
Attention: General Counsel

Norton Rose Fulbright US LLP
1301 Avenue of the Americas
New York, New York 10019-6022
Attention: Stuart D. Baker

11.6 No Strict Construction. This Agreement has been prepared jointly and will not be strictly construed against either Party.

11.7 Assignment. Neither Party may assign or transfer this Agreement or any rights or obligations under this Agreement without the prior written consent of the other Party, except that, subject to Section 11.8, a Party may make such an assignment or transfer without the other Party's consent (a) to the assigning Party's Affiliates or (b) to the successor to all or substantially all of the business or assets of such Party to which this Agreement relates (whether by merger, sale of stock, sale of assets or other transaction). Any permitted successor or assignee of rights and/or obligations under this Agreement will, in a writing to the other Party, expressly assume performance of such rights and/or obligations. Any permitted assignment will be binding on the successors of the assigning Party. Any assignment or attempted assignment by either Party in violation of the terms of this Section 11.7 will be null and void.

11.8 Performance by Affiliates. Each of Licensor and Licensee acknowledge that their obligations under this Agreement may be performed by their respective Affiliates. Notwithstanding any delegation of obligations under this Agreement by a Party to an Affiliate, each Party will remain primarily liable and responsible for the performance of all of its obligations under this Agreement and for causing its Affiliates to act in a manner consistent with this Agreement. Wherever in this Agreement the Parties delegate responsibility to Affiliates or local operating entities, the Parties agree that such entities will not make decisions inconsistent with this Agreement, amend the terms of this Agreement or act in breach of its terms.

11.9 Independent Contractors. It is understood and agreed that the relationship between the Parties is that of independent contractors and that nothing in this Agreement will be construed as creating a partnership for tax purposes or as an authorization for either Party to act as the agent for the other Party.

11.10 Further Actions. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

11.11 Severability. Each provision in this Agreement is independent and severable from the others, and no provision will be rendered unenforceable because any other provision may be invalid or unenforceable in whole or in part. If the scope of any restrictive provision in this Agreement is too broad to permit enforcement to its full extent, then such restriction will be reformed to the maximum extent permitted by law.

11.12 Headings. The headings for each Article and Section in this Agreement have been inserted for convenience of reference only and are not intended to limit or expand on the meaning of the language contained in the particular Article or Section.

11.13 No Waiver. Any delay in enforcing a Party's rights under this Agreement, or any waiver as to a particular default or other matter, will not constitute a waiver of such Party's rights to the future enforcement of its rights under this Agreement, except with respect to an express written and signed waiver relating to a particular matter for a particular period of time.

11.14 Interpretation. Except where the context otherwise requires, wherever used, the singular includes the plural, the plural the singular, the use of any gender applies to all genders. The word "or" has the inclusive meaning that is typically associated with the phrase "and/or"; the word "and" is used in the conjunctive sense. The term "including," "include," or "includes" means including, without limiting the generality of any description preceding such term. Unless the context requires otherwise, (i) any definition of or reference to any agreement, instrument or other document will be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein or therein), (ii) any reference to any applicable laws will be construed as referring to such laws as from time to time enacted, repealed or amended, (iii) any reference to any person will be construed to include the person's successors and permitted assigns, (iv) the words "herein", "hereof" and "hereunder", and words of similar import, will be construed to refer to this Agreement in its entirety and not to any particular provision hereof, (v) any reference to the words "mutually agree" or "mutual written agreement" will not impose any obligation on either Party to agree to any terms relating thereto or to engage in discussions relating to such terms except as such Party may determine in such Party's sole discretion, (vi) all references to Sections, Exhibits or Schedules will be construed to refer to Sections, Exhibits and Schedules to this Agreement, (vii) the word "days" means calendar days unless otherwise specified, and (viii) the words "copy" and "copies" and words of similar import when used in this Agreement include, to the extent available, electronic copies, files or databases containing the information, files, items, documents or materials to which such words apply.

11.15 No Strict Construction. Each Party represents that it has been represented by legal counsel in connection with this Agreement and acknowledges that it has participated in the drafting hereof. In interpreting and applying the terms and provisions of this Agreement, the Parties agree that no presumption will apply against the Party which drafted such terms and provisions.

11.16 Counterparts. This Agreement may be executed in two (2) or more counterparts, each of which will be deemed an original, but all of which together will constitute one (1) and the same instrument. For purposes of executing this Agreement, a facsimile copy of this Agreement, or .pdf copy, including the signature pages, will be deemed an original.

[Signature page follows]

In Witness Whereof the Parties have executed this Agreement in duplicate originals by their duly authorized officers as of the Effective Date.

Praxis precision medicines, inc.

By: /s/ Kiran Reddy
Name: Kiran Reddy
Title: President & CEO
Date: 12/31/17

PURDUE NEUROSCIENCE COMPANY by its general partner, Purdue Pharma L.P. by its general partner, Purdue Pharma Inc.

By: /s/ Edward B. Mahony
Name: Edward B. Mahony
Title: EVP
Date: 12/31/17

Exhibit A

[***]

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Exhibit B

[***]

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Exhibit C

[***]

37

Exhibit D

[***]

38

Schedule 1.80

[***]

Schedule 1.81

[***]

Exhibit 10.17

CERTAIN CONFIDENTIAL PORTIONS OF THIS EXHIBIT HAVE BEEN OMITTED AND REPLACED WITH "[***]". SUCH IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS (I) NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF DISCLOSED.

COOPERATION AND LICENSE AGREEMENT

BETWEEN

ROGCON INC.

AND

PRAXIS PRECISION MEDICINES, INC.

COOPERATION AND LICENSE AGREEMENT

This COOPERATION AND LICENSE AGREEMENT (the "Agreement") is made and entered into as of the 11th day of September, 2019 **(the *"Effective Date")* by and between RogCon Inc.**, a Delaware corporation, having its principal place of business at 5251 LaGorce Drive, Miami Beach, FL **33140 *RogCon"), and* Praxis Precision Medicines, Inc.**, a Delaware corporation with its principal **place of business at 101 Main Street #1210, Cambridge, MA 02142 ("Praxis"). Praxis and RogCon each may be referred to herein individually as a *"Party"* or collectively as the *"Parties."***

RECITALS

WHEREAS, coincident with the execution of this Agreement, Praxis is entering into that certain **Research Collaboration, Option and License Agreement with Ionis Pharmaceuticals, Inc.** *("Ionis")* (**the *"Ionis Agreement")*** pursuant to which Praxis and Ionis will, among other things, collaborate to develop an antisense oligonucleotide product for the treatment of epilepsy caused by mutations of the SCN2A gene and Praxis will have the exclusive right to commercialize such product, all on the terms and conditions set forth therein;

WHEREAS, RogCon initially identified the opportunity with Ionis and possesses certain Patent Rights, Know-How, technology and expertise with respect to such a product; and

WHEREAS, RogCon and Praxis are interested in combining their expertise to cooperate with respect to the development and commercialization of such product, all on the terms and conditions set forth below.

NOW, THEREFORE, in consideration of the respective covenants, representations, warranties and agreements set forth herein, the Parties hereto agree as follows:

ARTICLE 1.
DEFINITIONS

The terms used in this Agreement with initial letters capitalized, whether used in the singular or the plural, will have the meaning set forth (a) in the Ionis Agreement (except that references to a Party or the Parties, shall mean the Party or Parties hereto), (b) if not listed in the Ionis Agreement, in APPENDIX 1, or (c) if not listed in the Ionis Agreement or the in APPENDIX 1, in places throughout this Agreement.

ARTICLE 2.
ACTIVITIES / COORDINATION

2.1 Coordination Committee.

2.1.1. Scope/Decision-Making. The Parties shall establish a "Coordination Committee" to (a) consider strategic matters pertaining to the Research, Development, and Commercialization of Product for the Field in the Major Markets (including associated regulatory matters) and (b) review and monitor the progress of such activities. The Coordination Committee shall be composed of three (3) individuals

appointed by each Party, which shall include the Chief Executive Officers from each Party. All decisions of the Coordination Committee shall be made by consensus with each Party acting in good faith; however, if the Coordination Committee is unable to make any decision after good faith discussions, then the Chief Executive of Praxis shall have the right to make such decision. All such decisions shall be in writing. For clarity, the Coordination Committee's decision-making (and the Praxis Chief Executive's final decision-making) shall not include any right (a) to unilaterally impose any obligation on the other Party (b) to amend, modify or waive compliance with this Agreement, (b) to determine whether or not a Party has met its obligations under the Agreement, or (c) to determine whether or not a breach of this Agreement has occurred, and no decision of the Coordination Committee shall be in contravention of any terms and conditions of this Agreement.

2.1.2. **Meetings**. The Coordination Committee will meet prior to each meeting of the JSC under the Ionis Agreement to discuss matters on the agenda for the JSC meeting in an attempt to obtain alignment. After the dissolution of the JSC under the Ionis Agreement, the Coordination Committee will meet twice annually until the expiration of the Commitment Period. Additionally, each Party may also call for special meetings twice per year at any time during the Term to address matters requiring prompt attention with at least [***] prior notice (or such shorter period as necessary to address exigent matters) to resolve particular matters identified by such Party in such notice.

2.2 **Certain Activities**.

2.2.1. **By Praxis**. Praxis will conduct (itself or through one or more designees), at its own cost and expense, the Research and other activities assigned to it under the Research Plan, Development Candidate Identification Plan (including recordkeeping and reporting) or otherwise under the Ionis Agreement.

2.2.2. **By RogCon**. Subject to Section 4.1.3, RogCon will conduct (itself or through one or more third party service providers approved in advance by Praxis), the Research and other activities related to the Development of a Product as may be reasonably requested by Praxis from time to time (such activities, ***"RogCon Activities"***). In addition, upon Praxis' request, RogCon shall assign or otherwise transfer the benefits of its agreements with certain third party service providers to Praxis, including execution of such documents or taking such other actions reasonably requested by Praxis as may be necessary to effect such assignment or transfer.

2.3 **Selection of Development Candidate**. As between the Parties, Praxis shall have the right to select the Development Candidate and any Related Compound(s) and make other decisions allocated to Praxis under the Ionis Agreement; provided that Praxis shall consult with RogCon (through the Coordination Committee) and take into consideration RogCon's positions with respect thereto.

2.4 **Provision of Information.** Praxis will promptly provide to RogCon (through the Coordination Committee) all information (a) received from Ionis under the Ionis Agreement (including the Development Candidate Data Package) or (b) generated by or on behalf of Praxis or its Affiliates in the course of performing its activities under the Ionis Agreement, in each case of (a) and (b), only if and to the extent such information is reasonably necessary for the Coordination Committee to conduct those matters for which is it responsible.

2.5 **Invitations**. Praxis will use good faith efforts to invite RogCon to each scheduled meeting between Praxis and Ionis under the Ionis Agreement (and forward any meeting invite received from Ionis on which a RogCon representative is not copied) at which strategic matters pertaining to the Research, Development or Commercialization of Product for the Field in the Major Markets (including associated regulatory matters) are being discussed or decided, reasonably in advance to facilitate RogCon's participation. For clarity, RogCon will have (i) the right to have a single representative attend, and to the extent permitted by the Ionis Agreement, participate in any such meeting and (ii) no right to have any of its representatives attend any portion of a meeting not pertaining to Product.

ARTICLE 3.
LICENSES / EXCLUSIVITY

3.1 **License to Praxis**. Subject to the terms and conditions of this Agreement and the Non-Exclusive Patent License Agreement dated September 11, 2019 between RogCon and Ionis (the ***RogCon- Ionis Agreement")***, RogCon hereby grants, on behalf of itself and its Affiliates, to Praxis an exclusive, worldwide license under the RogCon IP to Research, Develop and Commercialize Product in the Field. Praxis shall have the right to exercise such license through its Affiliates solely for as long as such entity remains an Affiliate of Praxis, and Praxis shall remain responsible for the compliance of such Affiliate with the applicable terms of this Agreement.

3.2 **Sublicenses**. The license under Section 3.1 includes the right to grant sublicenses (through one or more tiers) within the scope thereof, including entering into any marketing partnering arrangement or any option for any such sublicense or arrangement (each, a **"Sublicense")**, without the consent of RogCon, subject to the following:

3.2.1. **Process**. Praxis agrees to keep RogCon reasonably informed of any discussion with respect to a proposed Sublicense; and at RogCon's reasonable request in connection therewith, Praxis will discuss any concerns that RogCon has with respect thereto.

3.2.2. **Copies**. Praxis shall promptly notify RogCon of the grant of each Sublicense and provide RogCon a copy of the final executed sublicense agreement, redacted for information not pertinent to this Agreement.

3.2.3. **Responsibility**. Praxis shall be responsible for the failure of any other Person bound by a Sublicense, and will use all commercially reasonable efforts to ensure that any such other Person complies in all material respect with any such Sublicense and with all relevant restrictions, limitations and obligations in this Agreement.

3.3 **No Other Rights**. Each Party acknowledges that the rights and licenses granted under this ARTICLE 3 and elsewhere in this Agreement are limited to the scope expressly granted. Accordingly, except for the rights expressly granted under this Agreement, no right, title, or interest of any nature whatsoever is granted whether by implication, estoppel, reliance, or otherwise, by either Party to the other Party. All rights with respect to Know-How, Patent Rights or other intellectual property rights that are not specifically granted herein are reserved to the owner thereof.

3.4 **Exclusivity of Efforts**. During the Term of this Agreement, RogCon agrees on its behalf and on behalf of its controlled Affiliates (a) not to conduct, participate in or sponsor, directly or indirectly, any activities directed toward the research of an ASO that is designed to bind to the mRNA or pre-mRNA and down-regulate the expression of SCN2A gene products (each, a ***"Competing Compound")*** or the development, commercialization or exploitation of any pharmaceutical product incorporating any Competing Compound (collectively, such activities ***"Competing Activities")*** or (b) appoint, license or otherwise authorize any Third Party, whether pursuant to such license, appointment, or authorization or otherwise to perform any Competing Activities. For clarity, nothing in this Section 3.4 is intended to prevent RogCon from conducting, participating in, or sponsoring (i) any independent research, development or commercialization of non-ASO compounds or pharmaceutical products incorporating the same, whether itself or through others, (ii) general technology development, including the discovery, research and development of assays or informatics, technologies, in each case with general applicability, or (iii) to generate specificity data, including negative controls and information with respect thereto, in each case of (i)—(iii) not directed predominantly to Competing Activities.

ARTICLE 4.
FINANCIAL TERMS

4.1 **Consideration**. In consideration for the obligations of RogCon and the rights and licenses granted to Praxis hereunder, the Parties agree as follows:

4.1.1. **Re-characterization of outstanding loan**. The Parties acknowledge that all amounts outstanding as of the Effective Date under that certain Loan Agreement, that certain Promissory Note and that certain Security Agreement, each dated December 21, 2018 **(collectively, the *"Credit Facility")*** between Praxis and RogCon shall be capitalized and no longer due and the Credit Facility is hereby terminated in its entirety by mutual agreement and neither Party shall have any further liability thereunder.

4.1.2. **Repayment of certain notes**. Within [***] following the Effective Date, Praxis shall retire the total amounts of principal and interest outstanding as of the Effective Date under those certain Non-Negotiable Demand Promissory Notes, dated December 19, 2018, between RogCon Inc. and London Management Corp. and PN Family Enterprises, Ltd.

4.1.3. **Reimbursement**. Within [***] after the Effective Date, RogCon shall prepare and provide to Praxis (a) a written report which details the Research and Development activities performed in relation to Product prior to the Effective Date, and an accounting of all out-of-pocket costs incurred by RogCon in connection therewith, along with reasonable supporting documentation with respect thereto and (b) an invoice for the amount of the out-of-pocket costs specified in such report. In addition, within [***] after the end of every calendar month during the Term during which RogCon performs RogCon Activities, RogCon shall prepare and provide to Praxis (i) a written report which details the activities performed and an accounting of all out-of-pocket costs incurred by RogCon in performing such activities in the prior calendar month, along with reasonable supporting documentation with respect thereto and (ii) an invoice for the amount of the out-of-pocket costs specified in such report. All undisputed costs within the aforementioned invoices shall be paid by Praxis in accordance with Section 4.2.2. Praxis will have the right to have an independent certified public accounting firm of internationally recognized standing, reasonably acceptable to RogCon, have access during normal business hours, and upon reasonable prior written notice, to RogCon's records as may be reasonably necessary to verify the accuracy of out-of-pocket costs reimbursable or reimbursed by Praxis pursuant to this Section 4.1.3 for any calendar month, Calendar Quarter or Calendar Year within the preceding [***]; **provided, however,** that Praxis will not have the right to conduct more than [***] such audit in any Calendar Year. The accounting firm will disclose to Praxis only whether the invoiced out-of-pocket expenses reimbursed or reimbursable pursuant to this Section 4.1.3 are correct and the details of any discrepancies. Praxis will bear the cost of such audit unless the audit reveals an underreporting of more than the greater of [***] of amounts paid or payable to RogCon over an applicable Calendar Year, in which case RogCon will promptly reimburse the cost of the audit. If, based on the results of such audit, amounts were overpaid by Praxis to RogCon, RogCon will issue to Praxis a credit in the amount of such overpayment, which credit may be applied against future royalty payments owed by Praxis to RogCon under this Agreement. Praxis and its accounting firm will treat the financial information subject to review under this Section 4.1.3 in accordance with the confidentiality provisions of ARTICLE 10**.**

4.1.4. **Milestone Payment**. In partial consideration for the rights and licenses granted to Praxis hereunder, Praxis will pay to RogCon a one-time, non-refundable, non-creditable milestone payment of $3 million, which milestone will be payable within [***] after the date both of the following conditions have been met: (a) the first Profit Share Payment has become due and payable to RogCon under Section 4.1.5 and (b) the Additional Milestone Payment, the [***] and the [***] (each as defined in the Ionis Agreement) have become due and payable to Ionis under the Ionis Agreement.

4.1.5. **Profit Share Payments**. In partial consideration for the rights and licenses granted to Praxis hereunder, Praxis will pay to RogCon the percentages of Net Profits as set forth in TABLE 1 below ***(collectively, the "Profit Share Payments")-.***

TABLE 1

Timing	Percentage of Net Profits
For all Net Profits generated during the period beginning on the Effective Date and ending on March 31 of the Calendar Year following the first Calendar Year in which annual, worldwide Net Product Revenues first exceed [***]	[***]
For all Net Profits generated during the period beginning on April 1 of the Calendar Year following the first Calendar Year in which annual, worldwide Net Product Revenues first exceed [***] and until March 31 of the Calendar Year following the first Calendar Year in which annual, worldwide Net Product Revenues first exceed [***]	[***]
For all Net Profits generated during the period beginning on April 1 of the Calendar Year following the first Calendar Year in which annual, worldwide Net Product Revenues first [***]	[***]

For the avoidance of doubt, even if annual, worldwide Net Product Revenues never exceed [***], Praxis will still pay to RogCon [***] of all Net Profits generated after the Effective Date.

4.2 Payment Logistics / Records.

4.2.1. Payment Reports. Each payment of a Profit Share Payment will be accompanied by a report summarizing the calculation of Net Profits (including the calculation of (a) Net Product Revenues, (b) Net Sublicense Revenues, and (c) Net Recoveries) during the relevant Calendar Quarter. If no Profit Share Payment is payable in respect of a given Calendar Quarter, Praxis will submit a written report to RogCon so indicating.

4.2.2. Mode of Payment. All payments under this Agreement will be, unless expressly provided herein otherwise, (a) payable in full in U.S. dollars (b) made by wire transfer of immediately available funds to an account designated by RogCon in writing, and (c) made within [***] of invoice. Whenever for the purposes of calculating any Profit Share Payment payable under this Agreement conversion from any foreign currency will be required, all amounts will first be calculated in the currency of sale and then converted into U.S. dollars by using the rate used by Praxis to report its audited finances or, if not so reported, by applying the monthly average rate of exchange calculated by using the foreign exchange rates published in Bloomberg during the applicable month starting two Business Days before the beginning of such month and ending two Business Days before the end of such month.

4.2.3. Records Retention. Commencing with the first accrual of Net Profits, Praxis will keep, and will require its Affiliates to keep (all in accordance with GAAP, consistently applied), complete and accurate records pertaining to Net Profits for a period of [***] after the year in which such Net Profits accrue and in sufficient detail to permit RogCon to confirm the accuracy of any Profit Share Payment hereunder.

4.2.4. **Audits of Payment Reports**. RogCon will have the right to have an independent certified public accounting firm of internationally recognized standing, reasonably acceptable to Praxis, have access during normal business hours, and upon reasonable prior written notice, to Praxis' records as may be reasonably necessary to verify the accuracy of Net Profits and any other payment due pursuant to this ARTICLE 4, as applicable, for any Calendar Quarter or Calendar Year within the preceding [***]; *provided, however,* that RogCon will not have the right to conduct more than [***] such audit in any Calendar Year. The accounting firm will disclose to RogCon only whether the reported Net Profits and any other payments due pursuant to this ARTICLE 4 are correct and details of any discrepancies. RogCon will bear the cost of such audit unless the audit reveals an underreporting of more than the greater of [***] of amounts payable to RogCon over an applicable Calendar Year, in which case Praxis will promptly reimburse the cost of the audit. If, based on the results of such audit, additional payments are owed by Praxis under this Agreement, Praxis will make such additional payments, with interest as set forth in Section 4.2.5(d), within [***] after the date on which such accounting firm's written report is delivered to Praxis. If, based on the results of such audit, amounts were overpaid by Praxis to RogCon, RogCon will issue to Praxis a credit in the amount of such overpayment, which credit may be applied against future royalty payments owed by Praxis to RogCon under this Agreement. RogCon and its accounting firm will treat the financial information subject to review under this Section 4.2.4 in accordance with the confidentiality provisions of ARTICLE 10.

4.2.5. **Taxes**.

(a) Each Party will be solely responsible for the payment of all taxes imposed on its share of income arising directly or indirectly from the activities of the Parties under this Agreement.

(b) The Parties agree to cooperate with one another and use reasonable efforts to lawfully avoid or reduce tax withholding or similar obligations in respect of royalties, milestone payments, and other payments made by Praxis to RogCon under this Agreement. To the extent Praxis is required to deduct and withhold taxes, interest or penalties on any payment, Praxis will pay the amounts thereof to the proper governmental authority for the account of RogCon and remit the net amount (i.e., the payment net of such taxes, interest and/or penalties) to RogCon in a timely manner. Praxis will promptly furnish RogCon with proof of payment of such taxes. If documentation is necessary to secure an exemption from, or a reduction in, any withholding taxes, the Parties will provide such documentation to the extent they are entitled to do so.

(c) RogCon will provide Praxis with any and all tax forms that may be reasonably necessary in order for Praxis to lawfully not withhold tax or to withhold tax at a reduced rate under an applicable bilateral income tax treaty. Following Praxis's timely receipt of such tax forms from RogCon, Praxis will not withhold tax or will withhold tax at a reduced rate under an applicable bilateral income tax treaty, if appropriate under the applicable laws. RogCon will provide any such tax forms to Praxis upon request and in advance of the due date. Each Party will provide the other with reasonable assistance to determine if any taxes are applicable to payments under this Agreement and to enable the recovery, as permitted by Applicable Law, of withholding taxes resulting from payments made under this Agreement, such recovery to be for the benefit of the Party who would have been entitled to receive the money but for the application of withholding tax under this Section 4.2.5.

(d) The provisions of this Section 4.2.5 are to be read in conjunction with the provisions of Section 12.1 below.

4.2.6. **Interest**. If Praxis fails to make any undisputed payment due to RogCon under this Agreement, by the deadline specified in this ARTICLE 4, interest will accrue daily at an annual rate equal to [***].

4.2.7. **Delivery of Financial Statements**. RogCon shall deliver to Praxis (a) as soon as practicable, but in any event within fifteen (15) days after the end of each of the first three (3) quarters of each fiscal year of RogCon, unaudited statements of income and cash flows for such fiscal quarter, and an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter, and (b) as soon as practicable, but in any event within thirty (30) days after the end of each fiscal year of RogCon, an unaudited statement of income and cash flows for such fiscal year and an unaudited balance sheet and statement of stockholders' equity as of the end of such fiscal year. All of the financial statements provided pursuant to clauses (a) and (b) above will be prepared in accordance with GAAP, except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP. In addition, RogCon shall deliver to Praxis as soon as practicable, but in any event within ninety (90) days after the Effective Date, audited statements of RogCon's income and cash flows and an audited balance sheet and statement of stockholders' equity for fiscal year 2018. Without limiting the foregoing, RogCon will provide Praxis with such reasonable assistance and support as may be requested by Praxis with respect to any questions Praxis has in regards to the financial statements provided to it by RogCon pursuant to this Section 4.2.7.

ARTICLE 5.
INTELLECTUAL PROPERTY

5.1 **Agreement IP**. Praxis will own all discoveries, inventions and creations made by or on behalf of Praxis, RogCon, or by Praxis and RogCon jointly the in the performance of activities under the Agreement ***"Agreement Know-How")*** together with Patent Rights that claim or cover Agreement Know-How ***"Agreement Patents"*** and together with the Agreement Know-How, the *"**Agreement IP**")*. Accordingly, RogCon shall, and does hereby assign, on behalf of itself and its Affiliates and all Persons acting on its or their behalf, to Praxis, without additional compensation, all right, title and interest, including all intellectual property rights embodied therein, in and to the Agreement IP. RogCon shall cause all Persons who perform RogCon Activities under this Agreement or who conceive, discover, develop or otherwise make any Agreement Know-How to be under a valid, written obligation to assign all their right, title, and interest in any Agreement Know-How resulting therefrom to RogCon, except to the extent such assignment is prohibited under Applicable Law. Upon Praxis' request, RogCon shall execute such documents and perform such acts as may be reasonably necessary to fully effect Praxis' sole and exclusive ownership of the Agreement IP. As between the Parties, Praxis shall have the sole and exclusive right, but not the obligation, to file, prosecute, maintain, enforce and defend any Agreement Patents and shall bear all costs and expenses of filing, prosecuting, maintaining, enforcing and defending the Agreement Patents and RogCon shall have no rights with respect thereto. Praxis, or its outside counsel, will provide the Coordination Committee with an update of the filing, prosecution and maintenance status for each Agreement Patent on a periodic basis and an opportunity to review and comment on (but not approve) any such filings.

5.2 **Prosecution of RogCon Patents**. Subject to Section 5.2.2, as between the Parties, Praxis (itself or through one or more others) will have the right and responsibility to obtain, prosecute, and maintain throughout the world all Agreement Patents and RogCon Patent Rights, at Praxis's expense. Praxis, or its outside counsel, will provide RogCon with an update of the filing, prosecution and maintenance status for each such Patent Rights on a periodic basis and will reasonably consult with and cooperate with RogCon on the preparation, filing, prosecution and maintenance of such Patent Rights, including providing RogCon with drafts of material filings in sufficient time to allow RogCon to review and comment before such filings are due. Praxis, or its outside counsel, will provide to RogCon copies of any material papers relating to the filing, prosecution and maintenance of such Patent Rights promptly upon their being filed or received. Praxis may cease prosecuting or maintaining particular applications or patents within such RogCon Patent Rights in selected jurisdictions, if Praxis determines that it is not commercially reasonable to continue such efforts (in which case the terms of Section 5.2.2 will apply).

5.2.1. **Notice of Disputes**. Each Party will notify the other Party within a reasonable period of time if any action, suit, claim, dispute or proceeding concerning the RogCon Patent Rights licensed hereunder or a Product has been initiated, which, if determined adversely to a Party, would have a material adverse effect on the licenses granted by RogCon to Praxis under this Agreement, or that would have a material adverse effect on or would materially impair either Party's rights under this Agreement. Any information communicated pursuant to this Section 5.2.1 will be treated as Confidential Information subject to the terms of ARTICLE 10.

5.2.2. **Discontinued Patents**. If, under Section 5.2, Praxis elects not to pursue or continue the filing, prosecution or maintenance of any particular applications or patents included in the RogCon Patent Rights, or any subject matter included in the RogCon Patent Rights, in any jurisdiction, Praxis will give as much advance written notice as reasonably practicable (but in no event less than [***] or, in the case of an applicable impending deadline, [***] prior to such deadline) to RogCon of any decision not to pursue or continue the preparation, filing, prosecution and maintenance of such RogCon Patent Right or subject matter included in such RogCon Patent Right (a ***"Discontinued Patent")***. In such case, RogCon may elect to continue preparation, filing, prosecution, or maintenance of the Discontinued Patent in the select jurisdiction at its expense. Praxis will execute such documents and perform such acts as may be reasonably necessary for RogCon to continue prosecution or maintenance of the applicable Discontinued Patent.

5.2.3. **Cooperation**. Each Party will cooperate reasonably in the preparation, filing, prosecution, maintenance, and defense of the RogCon Patent Rights at Praxis' expense. Such cooperation includes (a) promptly executing all papers and instruments and requiring employees to execute such papers and instruments as reasonable and appropriate to enable such other Party, to file, prosecute and maintain such RogCon Patent Rights in any country; and (b) promptly informing such other Party of matters that may affect the preparation, filing, prosecution or maintenance of any such RogCon Patent Rights.

5.2.4. For purpose of this Agreement, *"**prosecution and maintenance**"* means the filing, preparation, prosecution (including conducting all correspondence and interactions with any patent office and seeking, conducting and defending all any interferences, *inter partes* reviews, reissue proceedings, reexaminations, and oppositions and similar proceedings), and maintenance thereof, including obtaining patent term extensions, regulatory exclusivity, supplemental protection certificates, or their equivalents with respect thereto. When used as a verb, *"prosecute and maintain"* means to engage in prosecution and maintenance.

5.3 **Enforcement and Defense of RogCon Patents**.

5.3.1. **Enforcement**. With respect to the RogCon Patent Rights, Praxis will have the first right, but not the obligation, at Praxis' expense, to remove or abate any infringement or competing product in the Field (a *"*Competing Infringement*").* If RogCon requests that Praxis act to remove or abate a Competing Infringement, and Praxis believes it is not commercially appropriate to take such actions, the Parties will meet and discuss in good faith such circumstances and seek to reach agreement on what appropriate steps to take to cause such Competing Infringement to end in a commercially appropriate manner. If Praxis fails to take steps to initiate the process to remove or abate any such Competing Infringement with respect to a RogCon Patent Right within [***] following a written request from RogCon to act to remove or abate such infringement, or earlier notifies RogCon in writing of its intent not to take such steps, RogCon will have the right to do so at its expense unless Praxis notifies RogCon of a strategic rationale in good faith for non-enforcement of such RogCon Patent Rights. Any strategic rationale will be considered as made in good faith by Praxis if such strategic rationale is for any reason other than to avoid or reduce any payments payable to RogCon as set forth in ARTICLE 4. Praxis will have the right, at its own expense, to be represented in any such action brought by RogCon.

5.3.2. **Defense of IP**. In the event that an action alleging invalidity, unenforceability or noninfringement of any of the RogCon Patent Rights shall be brought against RogCon or Praxis (whether as an independent action or as a counterclaim of a suit filed by Praxis or RogCon pursuant to Section 5.3.1), Praxis, at its sole option, shall have the right, within [***] after the commencement of such action, to take or regain control of the action at its own expense. If Praxis shall determine not to exercise this right, then RogCon may take over or remain as lead counsel for the action at its sole expense. In addition, in the event that any action, suit or proceeding is brought against, or written notice or threat thereof is provided to, Praxis alleging infringement of any patent or unauthorized use or misappropriation of technology arising out of or in connection with Praxis' exercise of RogCon IP, Praxis shall have the right to defend, settle or compromise such action, suit or proceeding, at its own expense; provided, that Praxis shall have no right to deny the validity of any patent, patent claim, or patent application included in the RogCon Patent Rights in any compromise or settlement of any claim or suit without the express prior written consent of RogCon.

5.3.3. **Cooperation**. The Party not enforcing or defending the applicable Patent Rights will provide reasonable assistance to the other Party (at such other Party's expense), including providing access to relevant documents and other evidence, making its employees available at reasonable business hours, and joining the action as a named party to the extent necessary to allow the enforcing Party to bring or maintain the action or establish damages with respect to a Competing Infringement. If any Third Party asserts in writing or in any legal proceeding that any RogCon Patent Right is unenforceable based on any term or condition of this Agreement, the Parties will amend this Agreement as may reasonably be required to effect the original intent of the Parties, including preserving the enforceability of such RogCon Patent Right.

ARTICLE 6.
IONIS AGREEMENT

6.1 **General**. Praxis will not amend or waive any right under the Ionis Agreement in any way that would materially adversely affect RogCon or its rights herein, except with RogCon's prior written consent (such consent not to be unreasonably withheld, conditioned or delayed).

6.2 **Notices**. In the event that Praxis receives any written notice from Ionis either (a) related to material matters related to the Product or (b) informing Praxis that it has breached any provision of the Ionis Agreement or that Ionis intends or is threatening to terminate the Ionis Agreement, Praxis will give prompt written notice thereof to RogCon.

6.3 **Cessation of the Ionis Agreement by Praxis**.

6.3.1. **Notice**. Praxis agrees to provide RogCon with prompt written notice of any intention to issue a notice of termination under the Ionis Agreement (the ***"Cessation Notice Period")*** and will provide in such notice to RogCon the basis for any such termination. Additionally Praxis will promptly notify RogCon if it makes a determination that it does not intend to exercise the Option under the Ionis Agreement. In either case (Praxis' intent to terminate or not exercise the Option, a ***"Cessation Event")***, then at RogCon's reasonable request Praxis and RogCon will meet to discuss the basis for Praxis' decision and, if applicable, RogCon's desire to accept assignment of the rights and obligations of Praxis under the Ionis Agreement. If RogCon notifies Praxis that it desires to assume Praxis' rights and obligations under the Ionis Agreement then, upon RogCon's reasonable request, Praxis will provide reasonable cooperation and assistance to RogCon, including providing Ionis with copies of documentation supplied to Praxis by RogCon regarding RogCon's financial status, as may be necessary for RogCon to demonstrate to Ionis that RogCon meets the Assignment Criteria (as defined below).

6.3.2. **Assignment**. In the event of a Cessation Event and subject to RogCon meeting the criteria set forth in Section 17.1.2(b) of the Ionis Agreement ***("Assignment Criteria")*** and the satisfaction of the conditions to assignment set forth in Section 17.1.2(b) of the Ionis Agreement (the ***"Assignment Conditions")***, at the request of RogCon, Praxis shall assign Praxis's rights and obligations under the Ionis Agreement to RogCon. For clarity, Praxis agrees to not take any actions to directly effect a termination of the Ionis Agreement during the Cessation Notice Period.

ARTICLE 7.
REPRESENTATIONS, WARRANTIES AND COVENANTS

7.1 **Representations, Warranties and Covenants of Both Parties**. Each Party hereby represents, warrants and, where specified, covenants as of the Effective Date to the other Party that:

7.1.1. it has the power and authority and the legal right to enter into this Agreement and perform its obligations hereunder, and that it has taken all necessary action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

7.1.2. this Agreement has been duly executed and delivered on behalf of such Party and constitutes a legal, valid and binding obligation of such Party and is enforceable against it in accordance with its terms subject to the effects of bankruptcy, insolvency or other laws of general application affecting the enforcement of credit or rights and judicial principles affecting the availability of specific performance and general principles of equity, whether enforceability is considered a proceeding at law or equity;

7.1.3. all necessary consents, approvals and authorizations of all Regulatory Authorities and other parties required to be obtained by such Party in connection with the execution and delivery of this Agreement and the performance of its obligations hereunder have been obtained; and

7.1.4. the execution and delivery of this Agreement and the performance of such Party's obligations hereunder (a) do not conflict with or violate any requirement of Applicable Law or any provision of the certificate of incorporation, bylaws or any similar instrument of such Party, as applicable, in any material way, and (b) do not conflict with, violate, or breach or constitute a default or require any consent not already obtained under, any contractual obligation or court or administrative order by which such Party is bound.

7.2 **RogCon Representations, Warranties and Covenants**. RogCon hereby represents, warrants and covenants to Praxis that:

7.2.1. As of the Effective Date, APPENDIX 2 contains a complete and accurate list of all Patent Rights Controlled by RogCon that are necessary or reasonably useful to Develop, Manufacture, Commercialize and otherwise exploit Product in the Field;

7.2.2. As of the Effective Date, all issued Patent Rights within the RogCon Patent Rights are in full force and effect, have been filed, prosecuted and maintained in good faith, and, to the best of RogCon' knowledge, are valid and enforceable;

7.2.3. As of the Effective Date, RogCon has sufficient legal and/or beneficial title and ownership or right to license (or sublicense as the case may be) with respect to the RogCon IP as is necessary to fulfill its obligations under this Agreement and to grant the rights and licenses (or sublicenses as the case may be) granted to Praxis pursuant to this Agreement;

7.2.4. To RogCon's actual knowledge as of the Effective Date, no actions, suits, claims, disputes or proceedings concerning the RogCon Patent Rights are currently pending or are threatened in writing, that if determined adversely to RogCon would have an adverse effect on RogCon's ability to grant the licenses to Praxis under this Agreement, or that would have an adverse effect on or would impair Praxis's right to practice the rights and licenses granted under this Agreement by RogCon to Praxis;

7.2.5. RogCon has, or will subcontract for, the requisite personnel, facilities, equipment, expertise, experience and skill to perform its obligations under this Agreement;

7.2.6. RogCon will at all times comply with all Applicable Laws in the performance of its rights and obligations under this Agreement;

7.2.7. As of the Effective Date, there are no agreements between RogCon and any Third Party pursuant to which RogCon obtained rights to any Patent Rights or Know-How licensed hereunder (each, a ***"In-License Agreement")***;

7.2.8. In the event that RogCon enters into any In-License Agreements after the Effective Date, RogCon will (a) comply in all material respect with all terms and conditions of such In-License Agreements relating to RogCon' rights to RogCon IP, (b) not terminate any of RogCon's licenses or rights to RogCon IP under such In-License Agreements; (c) not amend such In-License Agreements in any way that would limit, modify or restrict Praxis's rights and licenses hereunder or increase or modify Praxis's obligations hereunder, or (d) not waive any rights under any In-License Agreements in a manner that would adversely affect the rights and licenses granted to or obligations undertaken by Praxis hereunder, except in each case (a)-(d) with Praxis's prior written consent; and

7.2.9. Except with respect to the RogCon-Ionis Agreement, as of the Effective Date, RogCon has not granted, and during the Term will not grant, any right or license to any Third Party under the RogCon IP or relating to Product for the Field that would conflict with or limit the scope of any of the rights or licenses granted under this Agreement by RogCon to Praxis.

7.3 **DISCLAIMER OF WARRANTY**. EXCEPT FOR THE EXPRESS WARRANTIES SET FORTH IN THIS ARTICLE 7, PRAXIS AND ROGCON MAKE NO REPRESENTATIONS AND GRANT NO WARRANTIES, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE, AND PRAXIS AND ROGCON EACH SPECIFICALLY DISCLAIM ANY WARRANTIES, WHETHER WRITTEN OR ORAL, OR EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF QUALITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE OR ANY WARRANTY AS TO THE VALIDITY OF ANY PATENT RIGHTS OR THE NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES.

ARTICLE 8.
INDEMNIFICATION; INSURANCE

8.1 **Indemnification by Praxis**. Praxis will indemnify, defend and hold harmless RogCon and its Affiliates, and its or their respective directors, officers, employees and agents (each, an ***"RogCon Indemnitee"),*** from and against any and all liabilities, damages, losses, costs and expenses, including the reasonable fees of attorneys and other professionals (collectively, ***"Losses")*** arising out of or resulting from any and all Third Party suits, claims, actions, proceedings or demands **("*Claims*")** based on:

8.1.1. the negligence, recklessness or willful misconduct of Praxis, its Affiliates and/or others acting on their behalf or under their authority and its or their respective directors, officers, employees and agents, in connection with Praxis's performance of its obligations or exercise of its rights under this Agreement;

8.1.2. any breach of any representation or warranty or express covenant made by Praxis in this Agreement;

8.1.3. the Development, Commercialization or manufacture of a Product by and/or on behalf of Praxis or its Affiliates and/or others acting on their behalf or under their authority, including handling and storage by and/or on behalf of Praxis or its Affiliates and/or others acting on their behalf or under their authority; except, in each case above, to the extent such Losses arose out of or resulted from (a) the gross negligence, recklessness or willful misconduct of any RogCon Indemnitee, (b) any breach by RogCon of any of its representations, warranties or covenants in this Agreement, or (c) any breach of Applicable Law by any RogCon Indemnitee.

8.2 **Indemnification by RogCon**. RogCon will indemnify, defend and hold harmless Praxis and its Affiliates, and its or their respective directors, officers, employees and agents (each, a *"**Praxis Indemnitee**"),* from and against any and all Losses arising out of or resulting from any and all Claims based on:

8.2.1. the negligence, recklessness or willful misconduct of RogCon and/or its Affiliates and its or their respective directors, officers, employees and agents, in connection with RogCon' performance of its [obligations or exercise of its rights] under this Agreement; or

8.2.2. any breach of any representation or warranty or express covenant made by RogCon in this Agreement; except, in each case above, to the extent such Losses arose out of or resulted from (a) the gross negligence or willful misconduct of any Praxis Indemnitee, (b) any breach by Praxis of any of its representations, warranties or covenants in this Agreement, or (c) any breach of Applicable Law by any Praxis Indemnitee.

8.3 **Procedure**. If an RogCon Indemnitee or Praxis Indemnitee seeks indemnification, such RogCon Indemnitee or Praxis Indemnitee will inform the indemnifying Party, in writing, of a Claim as soon as reasonably practicable after such RogCon Indemnitee or Praxis Indemnitee receives notice of such Claim (it being understood and agreed, however, that any failure by an RogCon Indemnitee or Praxis Indemnitee to give such a timely notice will not relieve the indemnifying Party of its indemnification obligations under this Agreement, except to the extent that the indemnifying Party is actually prejudiced as a result of such failure to timely give notice) and permit the indemnifying Party to assume direction and control of the defense of the Claim (including the sole right to settle it at the sole discretion of the indemnifying Party; *provided* that such settlement or compromise does not admit any fault or negligence on the part of the RogCon Indemnitee or Praxis Indemnitee, as applicable, or impose any obligation on, or otherwise materially adversely affect, the RogCon Indemnitee or Praxis Indemnitee). Notwithstanding the forgoing, the RogCon Indemnitees or Praxis Indemnitees, as applicable, will have the right to participate in such action or proceeding and to retain its own counsel but the indemnifying Party will not be liable for any legal expenses of other counsel subsequently incurred by such RogCon Indemnitee or Praxis Indemnitee in connection with the defense thereof unless (a) the indemnifying Party has agreed to pay such fees and expenses, (b) the indemnifying Party will have failed to employ counsel reasonably satisfactory to the RogCon Indemnitee or Praxis Indemnitee, as applicable, in a timely manner, or (c) the RogCon Indemnitee or Praxis Indemnitee will have been advised by counsel that there are actual or potential conflicting interests between the indemnifying Party and the RogCon Indemnitee or Praxis Indemnitee, including situations in which there are one or more legal defenses available to the RogCon Indemnitee or Praxis Indemnitee that are different from or additional to those available to the indemnifying Party.

8.4 **Insurance**. Praxis will maintain at its sole cost and expense, a liability insurance program (including clinical trials and product liability insurance) to protect against potential liabilities and risk arising out of activities to be performed under this Agreement and any agreement related hereto. At a minimum, Praxis will maintain, in force from 30 days prior to enrollment of the first patient in a Clinical Trial involving a Product until at least one year after the completion of all applicable Clinical Trials, at its sole cost, a [***] insurance policy providing coverage of at least [***] per claim and annual aggregate. Further, at least [***] before Praxis initiates the First Commercial Sale of any Product hereunder, Praxis will procure and maintain until at least one year after Praxis's cessation of Commercialization a [***] insurance policy providing coverage of the greater of (a) [***] per claim and annual aggregate or (b) in such amount and with such scope as is, at the date of the First Commercial Sale of any Product, considered sufficient in the industry for a prudent biotechnology company, having regard to the particular Products being commercialized. As applicable, Praxis will name RogCon as an additional insured and will upon request provide RogCon with a certificate of insurance. Praxis will promptly notify RogCon of any material change in insurance coverage or lapse in coverage.

8.5 TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAW, EXCEPT FOR BREACHES OF SECTION 3.4 (EXCLUSIVITY COVENANTS), ARTICLE 11 (CONFIDENTIALITY) AND EACH PARTY'S INDEMNIFICATION OBLIGATIONS UNDER THIS ARTICLE 8, NEITHER ROGCON NOR PRAXIS WILL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE OR INDIRECT DAMAGES ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT OR THE ACTIVITIES TO BE CONDUCTED PURSUANT TO THIS AGREEMENT, EVEN IF IT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

ARTICLE 9.
TERM; TERMINATION

9.1 **Term; Expiration**. This Agreement is effective as of the Effective Date and, unless earlier terminated pursuant to the other provisions of this ARTICLE 9 will continue in full force and effect until the later of (a) expiration of all Patent Rights within the RogCon Patents, (b) Praxis and its Affiliates certify that they have abandoned the Research, Development and Commercialization of Product with no intention to re-establish such activities and (c) no Third Party is obligated to pay Praxis or its Affiliates any amounts that would comprise Net Sublicense **Revenue (the *"Term"*).**

9.2 Termination of the Agreement.

9.2.1. Termination for Material Breach. If either Party believes that the other is in material breach of this Agreement, then the non-breaching Party may deliver notice of such breach to the other Party. To the extent the breach is capable of being cured, the allegedly breaching Party will have [***] to cure such breach (except to the extent such breach involves the failure to make a payment when due, which breach must be cured within [***] following such notice); **provided that,** in the case of a breach other than a breach involving the failure to make a payment when due, if the breaching Party uses Commercially Reasonable Efforts to cure such breach within the applicable [***] cure period but requires additional time to cure such breach, such [***] cure period will be extended until the earlier of [***] following the notice of breach or such time as the breaching Party is no longer using Commercially Reasonable Efforts to cure such breach. If the Party alleged to be in breach disputes such breach in good faith, then the other may not terminate unless it has been determined in accordance with Section 12.4.2 that this Agreement was breached and the breaching Party fails to cure such breach in accordance with this Section 9.2.1 following such determination.

9.2.2. Termination by Praxis. This Agreement may be terminated by Praxis, without cause, upon [***] written notice to RogCon, provided that no such termination shall be effective unless the Ionis Agreement is also terminated or assigned to RogCon.

9.2.3. Termination for Insolvency. Either Party may terminate this Agreement if, at any time, the other Party files in any court or agency pursuant to any statute or regulation of any state or country a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of the Party or of substantially all of its assets; or if the other Party proposes a written agreement of composition or extension of substantially all of its debts; or if the other Party is served with an involuntary petition against it, filed in any insolvency proceeding, and such petition is not dismissed within 90 days after the filing thereof; or if the other Party proposes to be or is a party to any dissolution or liquidation; or if the other Party makes an assignment of substantially all of its assets for the benefit of creditors. Notwithstanding any further rights under Applicable Law, upon written request of the other Party, the Party filing for bankruptcy, insolvency or a similar proceeding as set forth in this Section 9.2.3 will promptly provide to such other Party all information and documents necessary to prosecute, maintain and enjoy its rights under the terms of this Agreement.

9.3 Consequences of Termination of this Agreement.

9.3.1. Return of Information and Materials; Termination of License. Upon termination of this Agreement by either Party pursuant to this ARTICLE 9, (a) all rights and licenses granted by RogCon to Praxis hereunder will be divested from Praxis and will revert back to RogCon and (b) each Party will return to the other Party (or destroy, as directed by such Party) all data, files, records and other materials containing or comprising such Party's Confidential Information. Notwithstanding the foregoing, each Party will be permitted to retain one copy of such data, files, records, and other materials for archival purposes and for regulatory compliance.

9.3.2. **Sublicense Survival**. If this Agreement terminates for any reason, then, at Praxis's request, any Sublicense will survive and the sublicensee will, from the effective date of such termination, become a direct licensee of RogCon with respect to the rights sublicensed to the sublicensee by Praxis; so long as (a) Praxis has provided RogCon a complete copy of the applicable Sublicense and paid RogCon any Net Sublicense Revenue associated therewith, (b) such sublicensee is not in breach of its Sublicense, (c) such sublicensee continues to comply with all of the terms of the Sublicense, including the obligations of this Agreement imposed on sublicensee by the Sublicense, and (d) such sublicensee agrees to continue to pay directly to RogCon the portion of such sublicensee payments under the Sublicense due to RogCon under this Agreement. Praxis agrees that it will confirm clause (a) of the foregoing in writing at the request and for the benefit of RogCon and if requested, the sublicensee.

9.4 **Accrued Rights; Surviving Obligations**.

9.4.1. **Accrued Rights**. Termination or expiration of this Agreement for any reason will be without prejudice to any rights or financial compensation that will have accrued to the benefit of a Party prior to such termination or expiration. Such termination or expiration will not relieve a Party from obligations that are expressly indicated to survive the termination or expiration of this Agreement.

9.4.2. **Survival**. ARTICLE 1, ARTICLE 8, ARTICLE 11 (but only for the period of time specified in Section 11.1) and ARTICLE 12 and Section 3.3, Section 4.2 (with respect to amounts due or payable under Section 9.4.1), Section 5.3 (with respect to any proceeding ongoing as of the date of termination or expiration), Section 7.3, Section 9.3 and Section 9.4 of this Agreement will survive expiration or termination of this Agreement for any reason.

9.4.3. **Rights in Bankruptcy**. All rights and licenses granted under this Agreement are, for purposes of Section 365(n) of the U.S. Bankruptcy Code (*i.e.,* Title 11 of the U.S. Code) or analogous provisions of Applicable Law outside the United States, licenses of rights to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code or analogous provisions of Applicable Law outside the United States. The Parties agree that each Party, as licensee of such rights under this Agreement, will retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code or any other provisions of Applicable Law outside the United States that provide similar protection for "intellectual property." The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against a Party under the U.S. Bankruptcy Code or analogous provisions of Applicable Law outside the United States, the Party that is not subject to such proceeding will be entitled to a complete duplicate of (or complete access to, as appropriate) such intellectual property and all embodiments of such intellectual property, which, if not already in the non-subject Party's possession, will be promptly delivered to it upon the non-subject Party's written request therefor. Any agreements supplemental hereto will be deemed to be "agreements supplementary to" this Agreement for purposes of Section 365(n) of the U.S. Bankruptcy Code.

ARTICLE 10.
[Reserved]

ARTICLE 11.
CONFIDENTIALITY

11.1 **Disclosure and Use Restriction**. Each Party agrees that, for so long as this Agreement is in effect and for a period of [***] thereafter, a Party (the *"**Receiving Party**")* receiving Confidential Information of the other Party (the *"**Disclosing Party**")* will (a) maintain in confidence such Confidential Information, (b) not disclose such Confidential Information except to the Receiving Party's employees having a need-to-know such Confidential Information, (c) not disclose such Confidential Information to any Third Party without the prior written consent of the Disclosing Party (such consent not to be unreasonably withheld, conditioned or delayed), except for disclosures expressly permitted by this Agreement, and (d) not use such Confidential Information for any purpose except those expressly permitted by this Agreement.

11.2 **Authorized Disclosure**. To the extent that it is reasonably necessary or appropriate to fulfill its obligations or exercise its rights under this Agreement, a Party may disclose Confidential Information belonging to the other Party in the following instances:

11.2.1. filing, prosecuting and maintaining patent applications and patents in accordance with this Agreement;

11.2.2. communicating with Regulatory Authorities as necessary for the Development or Commercialization of a Product in a country, in accordance with this Agreement and as required in connection with any filing, application or request for Approval; provided, however, that reasonable measures will be taken to assure confidential treatment of such information;

11.2.3. prosecuting or defending litigation or other resolution mechanisms hereunder;

11.2.4. complying with Applicable Laws (including the rules and regulations of the Securities and Exchange Commission or any national securities exchange, and compliance with tax laws and regulations) and with judicial process, if (a) in the reasonable opinion of the Receiving Party's counsel, such disclosure is necessary for such compliance and (b) such disclosure is made in accordance with Section 11.3 or Section 11.4 as applicable;

11.2.5. disclosure, in connection with the performance of this Agreement or exercise of its rights hereunder and solely on a need-to-know basis, to Affiliates, potential or actual collaborators (including potential sublicensees), potential or actual investment bankers, investors, lenders, or acquirers, or employees, independent contractors or agents, and in the case of RogCon, potential or actual assignees of the payments, in each case of whom prior to disclosure must be bound by written obligations of confidentiality and non-use no less restrictive than the obligations set forth in this ARTICLE 11; provided, however, that the Receiving Party will remain responsible for any failure by any Person who receives Confidential Information pursuant to this ARTICLE 11 to treat such Confidential Information as required under this ARTICLE 11; and

11.2.6. in the case of Praxis, its Affiliates and sublicensees, use and disclosure of RogCon IP licensed to Praxis under this Agreement in the ordinary course of the exercise of the rights and licenses granted to Praxis hereunder and in the performance of its duties and obligations under the Ionis Agreement.

If Confidential Information is disclosed in accordance with this Section 11.2, such disclosure will not cause any such information to cease to be Confidential Information except to the extent that such permitted disclosure results in a public disclosure of such information (other than by breach of this Agreement). Where reasonably possible and subject to Section 11.3 and Section 11.4, the Receiving Party will notify the Disclosing Party of the Receiving Party's intent to make such disclosure pursuant to the applicable subsection of this Section 11.2 before making such disclosure to allow the Disclosing Party adequate time to take whatever action it may deem appropriate to protect the confidentiality of the information.

11.3 **Required Disclosure**. A Receiving Party may disclose Confidential Information pursuant to interrogatories, requests for information or documents, subpoena, civil investigative demand issued by a court or governmental agency or as otherwise required by Applicable Law; *provided, however,* that, unless legally prohibited from doing so, the Receiving Party will notify the Disclosing Party promptly upon receipt thereof, giving (where practicable) the Disclosing Party sufficient advance notice to permit it to oppose, limit or seek confidential treatment for such disclosure, and to file for patent protection if relevant; and *provided, further,* that the Receiving Party will furnish only that portion of the Confidential Information which it is advised by counsel is legally required, whether or not a protective order or other similar order is obtained by the Disclosing Party.

11.4 **Securities Filings**. If either Party proposes to file with the Securities and Exchange Commission or the securities regulators of any state or other jurisdiction a registration statement, periodic report, or any other disclosure document which describes or refers to this Agreement under the Securities Act of 1933, as amended, the Securities Exchange Act, of 1934, as amended, or any other applicable securities law, the Party will notify the other Party of such intention and will provide such other Party with a copy of relevant portions of the proposed filing not less than five Business Days prior to such filing, and will seek to obtain confidential treatment of any information concerning the Agreement that such other Party requests be kept confidential (except to the extent advised by counsel that confidential treatment is not available for such information), and will only disclose Confidential Information which it is advised by counsel is legally required to be disclosed. No such notice will be required under this Section 11.4 if the substance of the description of or reference to this Agreement contained in the proposed filing has been included in any previous filing made by either Party hereunder or otherwise approved by the other Party.

11.5 **Injunctive Relief**. The Parties understand and agree that remedies at law may be inadequate to protect against any breach of any of the provisions of this ARTICLE 11 by either Party. Accordingly, each Party is entitled to seek injunctive relief by a court of competent jurisdiction against any action that constitutes a breach of this ARTICLE 11.

11.6 **Press Releases**. If requested by RogCon from time to time, Praxis will discuss in good faith the right for RogCon to disclose to patient groups and others certain advances with respect to the Product. For clarity, any press release or other form of public communication or disclosure proposed to be made by RogCon in relation to the Product will be subject to Praxis' prior written approval, not to be unreasonably withheld, conditioned or delayed.

ARTICLE 12.
MISCELLANEOUS

12.1 **Assignment and Successors**. Neither this Agreement nor any obligation of a Party hereunder may be assigned by either Party without the consent of the other, which will not be unreasonably withheld, delayed or conditioned, except that (a) Praxis may assign this Agreement to Ionis if RogCon fails to achieve the Assignment Criteria or RogCon notifies Praxis that it does not desire to have the Ionis Agreement assigned to it or (b) each Party may assign this Agreement and the rights, obligations and interests of such Party, in whole or in part, without the other Party's consent, to any of its Affiliates, to any purchaser of all or substantially all of its business or assets to which this Agreement relates or to any successor corporation resulting from any merger, consolidation, share exchange or other similar transaction. Any purported assignment or transfer made in contravention of this Section 12.1 will be null and void.

12.2 **Severability**. If any provision of this Agreement is held to be illegal, invalid or unenforceable by a court of competent jurisdiction, such adjudication will not affect or impair, in whole or in part, the validity, enforceability or legality of any remaining portions of this Agreement. All remaining portions will remain in full force and effect as if the original Agreement had been executed without the invalidated, unenforceable or illegal part. The Parties agree to use good faith, reasonable efforts to replace the illegal, invalid or unenforceable provision with a legal, valid and enforceable provision that achieves similar economic and non-economic effects as the severed provision.

12.3 **Governing Law; Jurisdiction; Venue**.

12.3.1. This Agreement will be governed by and construed and enforced in accordance with the laws of the Commonwealth of Massachusetts without reference to any rules of conflicts of laws.

12.3.2. Subject to Section 12.4, each Party hereby irrevocably and unconditionally submits, for itself and its property, to the exclusive jurisdiction of the United States District Court for the District of Massachusetts (or, if but only if such court lacks, or will not exercise, subject matter jurisdiction over the entirety of the dispute, the Superior Court of the Commonwealth of Massachusetts sitting in the County of Suffolk).

12.3.3. Notwithstanding the foregoing or anything to the contrary herein, any dispute relating to the scope, validity, enforceability or infringement of any Patent Rights will be governed by and construed and enforced in accordance with the patent laws of the applicable jurisdiction.

12.4 Dispute Resolution.

12.4.1. Resolution by Senior Representatives. The Parties will seek to settle amicably any and all disputes, controversies or claims arising out of or in connection with this Agreement. Any such dispute between the Parties will, except to the extent expressly provided otherwise herein, be promptly presented to the Chief Executive Officer of Praxis and the Chief Executive Officer of RogCon (the ***"Senior Representatives"***), or their respective designees, for resolution. Such Senior Representatives, or their respective designees, will meet in person or by teleconference as soon as reasonably possible thereafter, and use their good faith efforts to agree on the resolution of the dispute, controversy or claim. If any such dispute cannot be resolved within [***] of presentation to the Senior Representatives, or their respective designees, for resolution, then, except as stated otherwise in this Agreement, either Party may refer such dispute to binding arbitration to be conducted as set forth below in this Section 12.4. For clarification, any dispute relating to the validity or scope of any Patent Rights will not be subject to arbitration.

12.4.2. Arbitration.

(a) Except to the extent that this Agreement identifies a Party who will have final decision-making authority over the matter, if the Parties fail to resolve the dispute through their Senior Representatives or their respective designees, then a Party may submit such dispute to arbitration by notifying the other Party, in writing of such dispute. Within [***] after receipt of such notice, the Parties will designate in writing a single arbitrator to resolve the dispute; provided, however, that if the Parties cannot agree on an arbitrator within such [***] period, the arbitrator will be selected by the Boston, Massachusetts office of the JAMS. The arbitrator will be a lawyer or retired judge knowledgeable and experienced in the Applicable Law concerning the subject matter of the dispute. In any case, the arbitrator will not be an Affiliate, employee, consultant, officer, director or stockholder of either Party, or otherwise have any current or previous relationship with either Party or their respective Affiliates. The place of arbitration will be Boston, Massachusetts. Either Party may apply to the arbitrator for the interim injunctive relief until the arbitration award is rendered or the controversy is otherwise resolved.

(b) Within [***] after the appointment of the arbitrator, the arbitrator and the Parties will meet, and each Party will provide to the arbitrator a written summary of all disputed issues, and such Party's position on such disputed issues.

(c) The arbitrator will set a date for a hearing, which will be no later than [***] after the submission of the Parties' summary of issues under Section 12.4.2(b), for the presentation of evidence and legal argument concerning each of the issues identified by the Parties. The Parties will have the right to be represented by counsel. Except as provided herein, the arbitration will be governed by the JAMS Streamlined Rules applicable at the time of the notice of arbitration pursuant to Section 12.4.2(a); *provided, however,* that the Federal Rules of Evidence will apply with regard to the admissibility of evidence in such hearing. In any such arbitration proceeding, the Parties will be entitled to all remedies to which they would be entitled in a United States District Court and to full discovery to the same degree permitted under the Federal Rules of Civil Procedure, including monetary damages, injunctive relief, termination of licenses or assignment of rights to a Product to either of the Parties.

(d) The arbitrator will use his or her best efforts to rule on each disputed issue within [***] after completion of the hearing described in Section 12.4.2(c). The determination of the arbitrator as to the resolution of any dispute will be binding and conclusive on all Parties. All rulings of the arbitrator will be in writing and will be delivered to the Parties as soon as is reasonably possible. Nothing contained herein will be construed to permit the arbitrator to award punitive, exemplary or any similar damages. The arbitrator will render a "reasoned decision" within the meaning of the JAMS Streamlined Rules, which will include findings of fact and conclusions of law.

(e) Each Party will bear its own attorneys' fees, costs and disbursements arising out of the arbitration, and will pay an equal share of the fees and cost of the arbitrator; *provided, however,* the arbitrator will be authorized to determine whether a Party is the prevailing party, and if so, to award to that prevailing party reimbursement for any or all of its reasonable attorneys' fees, cost and disbursements (including, for example, expert witness fees and expenses, photocopy charges, travel expenses, etc.), and/or the fees and costs of the administrator and the arbitrator.

(f) Except to the extent necessary to confirm an award or as may be required by Applicable Law, neither Party nor an arbitrator may disclose the existence, content or results of an arbitration without the prior written consent of both Parties. No arbitration may be initiated after the date when a legal or equitable claim would otherwise be barred by the applicable statute(s) of limitations.

12.5 **Injunctive Relief; Court Actions**. Notwithstanding anything to the contrary in this Agreement, each Party will be entitled to seek from any court of competent jurisdiction, in addition to any other remedy it may have at law or in equity, injunctive or other equitable relief in the event of an actual or threatened breach of this Agreement by the other Party, without the posting of any bond or other security, and such an action may be filed and

maintained notwithstanding any ongoing discussions between the Parties or any ongoing arbitration proceeding. The Parties agree that in the event of a threatened or actual material breach of this Agreement, injunctive or equitable relief would be an appropriate remedy. In addition, either Party may bring an action in any court of competent jurisdiction to resolve disputes pertaining to the validity, construction, scope, enforceability, infringement or other violations of Patent Rights or other intellectual property rights, and no such claim will be subject to arbitration pursuant to Section 12.4.2.

12.6 **Force Majeure**. No Party will be held responsible to the other Party nor be deemed to be in default under, or in breach of any provision of, this Agreement for failure or delay in performing any obligation of this Agreement when such failure or delay is due to force majeure, and without the fault or negligence of the Party so failing or delaying. For purposes of this Agreement, force majeure means a cause beyond the reasonable control of a Party, which may include acts of God, war, terrorism, civil commotion, fire, flood, earthquake, tornado, tsunami, explosion, storm, pandemic, epidemic or failure of public utilities or common carriers. In such event the Party so failing or delaying will immediately notify the other Party of such inability and of the period for which such inability is expected to continue. The Party giving such notice will be excused from such of its obligations under this Agreement as it is thereby disabled from performing for so long as it is so disabled for up to a maximum of [***], after which time the Parties will negotiate in good faith any permanent or transitory modifications of the terms of this Agreement that may be necessary to arrive at an equitable solution, unless the Party giving such notice has set out a reasonable timeframe and plan to resolve the effects of such force majeure and executes such plan within such timeframe. To the extent possible, each Party will use reasonable efforts to minimize the duration of any force majeure.

12.7 **Notices**. Any notice or request required or permitted to be given under or in connection with this Agreement will be deemed to have been sufficiently given if in writing and personally delivered or sent by certified mail (return receipt requested), e-mail transmission (receipt verified), or overnight express courier service (signature required), prepaid, to the Party for which such notice is intended, at the address set forth for such Party below:

If to RogCon, addressed to:

RogCon, Inc.
4410 Prairie Avenue
Miami, FL 33140
Attention: Alex Nemiroff
alex@rogconbio.com

If to Praxis, addressed to:

Praxis Precision Medicines, Inc.
One Broadway Street
16th Floor
Cambridge, MA 02142
Attention: Chief Business Officer
stuart@praxismedicines.com

or to such other address as the Party to whom notice is to be given may have furnished to the other Party in writing in accordance herewith. Any notice given hereunder will be deemed to have been given (a) when delivered, if delivered personally or by e-mail, unless delivery occurs on a weekend or Federal holiday, in which case the date of delivery will be the next Business Day; (b) on the next Business Day after deposit, if sent by overnight express courier service; and (c) on the third Business Day after the date of mailing, if sent by mail.

12.8 **Export Clause**. Each Party acknowledges that the laws and regulations of the United States restrict the export and re-export of commodities and technical data of United States origin. Each Party agrees that it will not export or re-export restricted commodities or the technical data of the other Party in any form without the appropriate United States and foreign government licenses.

12.9 **Waiver**. Neither Party may waive or release any of its rights or interests in this Agreement except in writing. The failure of either Party to assert a right hereunder or to insist upon compliance with any term or condition of this Agreement will not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition. No waiver by either Party of any condition or term in any one or more instances will be construed as a continuing waiver or subsequent waiver of such condition or term or of another condition or term.

12.10 **Entire Agreement; Modifications**. This Agreement (including the attached Appendices and Schedules) together with any Consulting Agreement sets forth and constitutes the entire agreement and understanding between the Parties with respect to the subject matter herein, and all prior agreements, understanding, promises and representations, whether written or oral, with respect thereto are superseded hereby. Each Party confirms that it is not relying on any representations or warranties of the other Party except as specifically set forth in this Agreement. No amendment, modification, release or discharge will be binding upon the Parties unless in writing and duly executed by an authorized representative of each Party.

12.11 **Independent Contractors**. Nothing herein will be construed to create any relationship of employer and employee, agent and principal, partnership or joint venture between the Parties. Each Party is an independent contractor of the other. Neither Party will assume, either directly or indirectly, any liability of or for the other Party. Neither Party will have the authority to bind or obligate the other Party, and neither Party will represent that it has such authority.

12.12 **Interpretation**. Except as otherwise explicitly specified to the contrary, (a) references to a Section, exhibit, Appendix or Schedule means a Section of, or Schedule or exhibit or Appendix to this Agreement, unless another agreement is specified, (b) the word “including” (in its various forms) means “including without limitation,” (c) the words “will” and “shall” have the same meaning, (d) references to a particular statute or regulation include all rules and regulations thereunder and any predecessor or successor statute, rules or regulation, in each case as amended or otherwise modified from time to time, (e) words in the singular or plural form include the plural and singular form, respectively, (f) references to a particular Person include such Person’s successors and assigns to the extent not prohibited by this Agreement, (g) unless otherwise specified, “$” is in reference to U.S. dollars, and (h) the headings contained in this Agreement, in any exhibit or Appendix or Schedule to this Agreement are for convenience only and will not in any way affect the construction of or be taken into consideration in interpreting this Agreement.

12.13 **Further Actions**. Each Party will execute, acknowledge and deliver such further instruments, and do all such other acts, as may be necessary or appropriate to carry out the expressly stated purposes and the clear intent of this Agreement.

12.14 **Construction**. The terms of this Agreement represent the results of negotiations between the Parties and their representatives, each of which has been represented by counsel of its own choosing, and neither of which has acted under duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms of this Agreement will be interpreted and construed in accordance with their usual and customary meanings, and each of the Parties hereby waives the application in connection with the interpretation and construction of this Agreement of any rule of law to the effect that ambiguous or conflicting terms contained in this Agreement will be interpreted or construed against the Party whose attorney prepared the executed draft or any earlier draft of this Agreement.

12.15 **Supremacy**. In the event of any express conflict or inconsistency between this Agreement and any Schedule or Appendix hereto, the terms of this Agreement will apply.

12.16 **Counterparts**. This Agreement may be signed in counterparts, each of which will be deemed an original, notwithstanding variations in format or file designation which may result from the electronic transmission, storage and printing of copies of this Agreement from separate computers or printers. Facsimile signatures and signatures transmitted via electronic mail in .PDF format will be treated as original signatures.

12.17 **No Benefit to Third Parties**. The representations, warranties, covenants and agreements set forth in this Agreement are for the sole benefit of the Parties hereto and their successors and permitted assigns, and they will not be construed as conferring any rights on any other parties.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their representatives thereunto duly authorized as of the Effective Date.

PRAXIS PRECISION MEDICINES, INC.

By: /s/ Kiran Reddy

Name: Kiran Reddy

Title: President & CEO

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their representatives thereunto duly authorized as of the Effective Date.

ROGCON INC.

By: /s/ Alex Nemiroff
Name: Alex Nemiroff
Title: Chief Executive Officer

List of Appendices

Appendix 1

DEFINITIONS

For purposes of this Agreement, the following capitalized terms will have the following meanings:

"Affiliate" of an entity means any corporation, firm, partnership or other entity which directly or indirectly through one or more intermediaries controls, is controlled by or is under common control with a Party to this Agreement. An entity will be deemed to control another entity if it (a) owns, directly or indirectly, at least fifty percent (50%) of the outstanding voting securities or capital stock of such other entity, or has other comparable ownership interest with respect to any entity other than a corporation; or (b) has the power, whether pursuant to contract, ownership of securities or otherwise, to direct the management and policies of the entity.

"Commitment Period' means the period beginning on the Effective Date and continuing through the First Commercial Sale of any Product in any Major Market.

"Net Incentive Value" means the aggregate sale price received by Praxis or any of its Affiliates from a sale to a Third Party of a priority review voucher awarded to Praxis or its Affiliates by the FDA or other U.S. governmental agency with respect to a Product (a ***"Voucher"),*** including all monies, cash equivalents and the fair market value of other consideration, *less* (a) all reasonable out-of-pocket expenses incurred by Praxis or its Affiliate directly related to marketing and selling the Voucher, including legal fees, financial advisor fees and Third Party broker or finder fees paid to Third Parties and (b) any amount paid or payable to Ionis with respect thereto under the Ionis Agreement.

"Net Product Revenues" means (a) gross amounts invoiced for the sale of Product by Praxis or its Affiliates less (b) (i) amounts paid or payable to Ionis with respect to such Product under the Ionis Agreement, (ii) amounts paid or payable to Third Parties for access to technology or intellectual property incorporated or used for such Product, (iii) direct and indirect costs (e.g., discounts, allowances, rebates, payments to third parties, cost of goods sold, sales, general and administrative costs, and taxes, costs and expenses associated with any post-marketing studies required by a Regulatory Authority) actually incurred by Praxis or it Affiliate and allocable to such Product in accordance with GAAP and (iv) Losses actually paid or incurred by Praxis in connection with Praxis' defense of any Third Party challenge to the RogCon Patent Rights or any assertion of infringement or misappropriation of any Third Party's intellectual property rights.

"Net Profits" means, with respect to a particular period, any and all (a) Net Product Revenues, (b) Net Sublicense Revenues, (c) Net Recoveries and (d) Net Incentive Value.

"Net Recoveries" means (a) all damages or other monetary awards recovered or amounts received in settlement of any action for a Competing Infringement by Praxis or its Affiliates less (b) (i) reasonable out-of-pocket costs incurred by Praxis or its Affiliates in connection with such action and (ii) amounts paid or payable to Ionis with respect thereto under the Ionis Agreement.

"Net Sublicense Revenues" means any consideration, cash or nonmonetary, that Praxis receives from a sublicensee under any agreement or series of agreements that include the grant of any Sublicense (or right to receive a Sublicense), including but not limited to license fees, option fees, up-front payments, milestone payments, royalties, royalty pre-payments, profit sharing, license maintenance fees and payments for Praxis equity above the fair market value of such equity, other than: (a) payments expressly stated in the applicable agreement to reimburse Praxis for costs Praxis is expressly committed to incur and has incurred under a plan and budget codified in the applicable agreement (including equipment purchases and personnel actually provided by Praxis) in the development of Products which are the subject matter of such Sublicense, (b) reimbursement of the milestone payment paid by Praxis for the milestone event in Section 4.1.4 hereunder, (c) amounts incurred with respect to the filing, prosecution or maintenance of any RogCon Patent Rights, (d) bona fide loans or other debt obligations (unless and until forgiven), (e) amounts received from any Third Party for the purchase of equity at fair market value. If Praxis receives any non-cash Net Sublicense Revenue, Praxis will pay RogCon, at RogCon's election, either (i) a cash payment equal to the fair market value of RogCon's portion of the Net Sublicense Revenue or (ii) the in-kind portion, if practicable, of the Net Sublicense Revenue. To the extent that Net Sublicense Revenue represents an unallocated combined payment for amounts received both (1) in consideration of the grant of a Sublicense, and (2) in connection with other intellectual property, undertakings or subject matter, such Net Sublicense Revenue for calculating payments due to RogCon will be reasonably allocated in good faith by agreement of the Parties, such agreement not to be unreasonably withheld, conditioned or delayed by either Party, between (1) and (2) based on their relative value. For clarity, amounts received by Praxis, its Affiliates or their stockholders in a sale of all or substantially all of Praxis's or its Affiliate's assets or business, whether by merger, sale of assets or otherwise, shall not be Net Sublicense Revenue.

"RogCon IP" means the RogCon Know-How and RogCon Patent Rights.

"RogCon Know-How" means any and all Know-How Controlled by RogCon or its Affiliates at any time during the Term that is reasonably necessary for the Research, Development or Commercialization of the Development Candidate or any [***] within the Field.

"RogCon Patent Rights" means any and all Patent Rights Controlled by RogCon or its Affiliates at any time during the Term claiming (specifically or generically) (a) compositions of matter of any Development Candidate or [***] (or any formulation thereof), (b) methods or processes for the manufacture or synthesis of any Development Candidate or [***] (or any formulation thereof) or (c) methods of use, administration or formulation of any Development Candidate or [***] (or any formulation thereof) for the Field.

APPENDIX 2

[***]

Exhibit 10.18

CERTAIN CONFIDENTIAL PORTIONS OF THIS EXHIBIT HAVE BEEN OMITTED AND REPLACED WITH "[***]". SUCH IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS (I) NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF DISCLOSED.

RESEARCH COLLABORATION, OPTION AND LICENSE AGREEMENT

BETWEEN

IONIS PHARMACEUTICALS, INC.

AND

PRAXIS PRECISION MEDICINES, INC.

RESEARCH COLLABORATION, OPTION AND LICENSE AGREEMENT

This RESEARCH COLLABORATION, OPTION AND LICENSE AGREEMENT (the "***Agreement***") is made and entered into as of the 11th day of September, 2019 (the "***Effective Date***") by and between **Ionis Pharmaceuticals**, **Inc.**, a Delaware corporation, having its principal place of business at 2855 Gazelle Court, Carlsbad, CA 92010 ("***Ionis***"), and **Praxis Precision Medicines**, **Inc.**, a Delaware corporation with its principal place of business at One Broadway Street, 16th Floor, Cambridge, MA 02142 ("***Praxis***"). Praxis and Ionis each may be referred to herein individually as a "***Party***" or collectively as the "***Parties***"

RECITALS

WHEREAS, Ionis possesses certain Patent Rights, Know-How, technology and expertise with respect to antisense drugs, and has novel and valuable capabilities for the research, discovery, identification, development and synthesis of antisense drugs;

WHEREAS, Praxis is engaged in the research, development and commercialization of human therapeutic products and has expertise in the area of SCN2A and its role in epilepsy;

WHEREAS, Ionis and Praxis are interested in combining their expertise to enter into a collaboration to discover and develop antisense oligonucleotide drugs that treat forms of epilepsy caused by mutations of the SCN2A gene by selectively binding and down-regulating gene products of the SCN2A gene;

WHEREAS, such collaboration will include (i) validation and application of ASOs for the treatment of epilepsy caused by mutations of the SCN2A gene, (ii) drug discovery to identify a Development Candidate down-regulating gene products of the SCN2A gene, and (iii) development of the Development Candidate by Ionis through completion of the IND-enabling toxicology study, all on the terms and conditions set forth below; and

WHEREAS, Ionis desires to grant to Praxis an option to obtain, among other things, an exclusive, worldwide license to develop and commercialize the Development Candidate identified by Ionis and Praxis desires to obtain such option.

NOW, **THEREFORE**, in consideration of the respective covenants, representations, warranties and agreements set forth herein, the Parties hereto agree as follows:

ARTICLE 1.
DEFINITIONS

The terms used in this Agreement with initial letters capitalized, whether used in the singular or the plural, will have the meaning set forth in APPENDIX 1, or if not listed in APPENDIX 1, the meaning designated in places throughout this Agreement.

ARTICLE 2.
AGREEMENT OVERVIEW

The Parties intend that under this Agreement, (i) the Parties will combine their respective expertise to conduct a research collaboration pursuant to the Research Plan, (ii) under the Research Plan, Ionis and Praxis will conduct Research to validate and further support the use of ASOs to bind to the mRNA or pre-mRNA and down-regulate the expression of SCN2A gene products to treat conditions in the Field, (iii) under the Development Candidate Identification Plan, Ionis will perform drug discovery activities to identify a Development Candidate and one or more Related Compounds, (iv) Ionis will develop the Development Candidate through completion of the IND-Enabling Toxicology Study, (v) Ionis will provide Praxis an Option to obtain an exclusive license from Ionis to Develop and Commercialize the Development Candidate in the Field, (vi) Praxis will have a limited right to expand the Field and (vii) upon exercise of its Option, Praxis will be responsible for all further Development and Commercialization activities and costs for the Products in the Field. The purpose of this ARTICLE 2 is to provide a high-level overview of the roles and responsibilities and rights and obligations of each Party under this Agreement, and therefore this ARTICLE 2 is qualified in its entirety by the more detailed provisions of this Agreement set forth below.

ARTICLE 3.
RESEARCH AND DEVELOPMENT

3.1 **Research Responsibilities and Research Plan**. Subject to and in accordance with the terms of this Agreement, Ionis and Praxis will conduct Research activities related to down-regulation of SCN2A gene products associated with the Field under a mutually agreed plan including scope and budget for such activities (the "***Research Plan***"). The Research Plan will specify the Research studies each Party will conduct to validate and further support the use of ASOs down-regulating gene products of the SCN2A gene for the Field. The initial Research Plan has been approved by the Parties as of the Effective Date and may be updated by mutual agreement of the Parties (through the JSC). If the JSC cannot agree upon any update to the Research Plan proposed by either Party within [***] following submission of such update by a Party to the JSC, then either Party may refer the matter to the Senior Representatives for resolution. If the Senior Representatives cannot agree on any proposed update to the Research Plan within an additional [***] after the matter is so referred, then, except as set forth in Section 3.6.1, Ionis will have final decision-making authority with respect to any elements of any proposed update to the Research Plan to which the Senior Representatives cannot agree that [***], and Praxis will have final decision-making authority with respect to any elements of any proposed update to the Research Plan to which the Senior Representatives cannot agree that [***]. Neither Party will have any obligation to perform additional activities that are not expressly set forth in the Research Plan and identified as activities to be performed by such Party. If the Parties mutually agree that either Party will conduct additional work under the Research Plan, they will agree on the scope, budget and payment for such additional work and amend the Research Plan accordingly (through the JSC). Neither Party will have any obligation to begin work until a budget is agreed to by the Parties.

3.2 **Research Plan Costs**. Except as otherwise provided under this Agreement, each Party will pay its own respective internal costs incurred in connection with conducting its activities under the Research Plan, and Praxis will reimburse Ionis for its actual out-of-pocket costs paid to Third Parties for (a) supplies needed to conduct the activities assigned to Ionis under the Research Plan, and (b) activities performed or to be performed on Ionis' behalf under the Research Plan, in accordance with the budget therefor ("***Ionis Research Costs***"). If Ionis intends to engage a Third Party to perform any of Ionis' activities under the Research Plan and Praxis has not already agreed under the Research Plan to the performance of such activities by such Third Party, Ionis will notify Praxis in advance of such engagement. Ionis will submit invoices to Praxis for such Ionis Research Costs on a quarterly basis. In each case, Praxis will pay to Ionis all Ionis Research Costs set forth in any such invoice which correspond to the approved budget in the Research Plan within [***] following Praxis' receipt of such invoice. Praxis will pay for all of its activities expressly contemplated to be assigned by Praxis to any Third Party under the Research Plan, including all such activities to be performed by RogCon on behalf of Praxis.

3.3 **Recordkeeping; Reporting**. Praxis and Ionis will prepare and maintain complete and accurate records regarding their respective activities under the Research Plan. At each meeting of the JSC, or if otherwise requested by a Party, each Party will deliver a written report to the other (along with any requested copies of data or reports) describing the activities conducted by such Party under the Research Plan.

3.4 **Manufacturing and Supply**. During the Collaboration Term, Ionis will supply up to [***] solely for Praxis to conduct studies under the Research Plan. Except as set forth in this Section 3.4, and subject to Section 3.6.1, Praxis is responsible for supplying all API and finished drug product for the Parties' activities under this Agreement.

3.5 **Development Candidate Identification**.

3.5.1 **Development Candidate Identification Plans**. Promptly after the Effective Date, but in any event within [***] thereafter, Ionis will submit to the JSC for its review and approval an initial draft plan to identify a Development Candidate (such plan, as may be modified by the JSC from time to time to address the discovery activities to be conducted by Ionis, the "***Development Candidate Identification Plan***"). No later than [***] after submission of the Development Candidate Identification Plan to the JSC, the JSC will agree on the final Development Candidate Identification Plan, which plan will be consistent with Ionis' other plans for other gene targets. From time to time during the Collaboration Term Ionis will update the Development Candidate Identification Plan as needed and submit it to the JSC for its review and approval in accordance with Section 4.1.2. If the JSC cannot agree upon any aspect of the final Development Candidate Identification Plan or any update thereto proposed by Ionis within [***] following discussion at the meeting of the JSC, then either Party may refer the matter to the Senior Representatives for resolution. If the Senior Representatives cannot agree on any aspect of the final Development Candidate Identification Plan or any proposed update thereto within an additional [***] after the matter is so referred, then Ionis will have final decision-making authority with respect to any elements of the Development Candidate

Identification Plan to which the Senior Representatives cannot agree. Ionis will carry out its drug discovery efforts in accordance with the Development Candidate Identification Plan and in a manner consistent with its internal practices for other gene targets with the goal of identifying the optimal Compound as the Development Candidate and at least one Related Compound as soon as practicable.

3.5.2 **Delivery of the Development Candidate Data Package**. Within [***] after approval by Ionis' research management committee ("***RMC***") of a Development Candidate under the Development Candidate Identification Plan, Ionis will provide to the JSC a Development Candidate Data Package. Such Development Candidate Data Package will include one Compound that Ionis' RMC has approved as the most suitable lead Development Candidate under the Development Candidate Identification Plan and will also include any and all other Compounds that Ionis' RMC considered as possible Development Candidates in connection with its review of Compounds generated under the Development Candidate Identification Plan (all such additional Compounds that are identified by Ionis' RMC as potential backup Compounds, the "***Related Compounds***"). The Development Candidate Data Package will include a level of detail for the proposed Development Candidate and any Related Compounds that Ionis typically has for its other similar programs. If Ionis' RMC determines that there are no suitable Related Compounds, Ionis will include in the Development Candidate Data Package the data resulting from the final monkey screening study performed under the Development Candidate Identification Plan, if such data is not already included in the Development Candidate Data Package.

3.6 **IND-Enabling Toxicology Study**.

3.6.1 **IND-Enabling Toxicology Study Design**. The Parties have agreed upon a high- level outline of a pre-clinical toxicology plan as of the Effective Date, and will finalize such plan at the first meeting of the JSC. The JSC will propose and agree upon a pre-clinical toxicology plan for die Development Candidate ("***IND- Enabling Toxicology Plan***") no later than [***]. If the JSC is unable to agree on the IND-Enabling Toxicology Plan within the time period set forth in this Section 3.6.1, then either Party may refer the matter to the Senior Representatives for resolution. If the Senior Representatives cannot agree on the IND-Enabling Toxicology Plan within [***] after the matter is so referred, then Ionis will have final decision-making authority with respect to [***], provided that Ionis' decision is consistent with the choices Ionis makes for its other similar programs, and Praxis will have final decision-making authority with respect to [***]. Promptly after the Parties agree upon the IND- Enabling Toxicology Plan, Praxis will notify the JSC of the name of the contract manufacturing organization ("***CMO***") Praxis intends to use for the supply of the API and finished drug product to be used in the IND-Enabling Toxicology Study and provide to the JSC a draft statement of work for the manufacture of such supply. Praxis will, at its own expense, deliver API and finished drug product to Ionis or Ionis' designee for the IND-Enabling Toxicology Study contemplated in the IND-Enabling Toxicology Plan and will endeavor to make such delivery no later than [***]. Praxis will enter into an agreement with

such CMO for the production of the API and finished drug product to be used in the IND-Enabling Toxicology Study, and, if applicable, shall have reserved a manufacturing slot with such CMO for such production (and pay any reservation fees, if applicable), no later than [***]. Ionis will conduct the IND-Enabling Toxicology Study in accordance with the IND-Enabling Toxicology Plan. Ionis will provide the Draft Report for the IND-Enabling Toxicology Study to the JSC and to Praxis promptly following Completion of such study.

3.6.2 **IND-Enabling Toxicology Costs**. Before commencing any IND-Enabling Toxicology Study, Ionis will provide a good faith detailed estimate of Ionis' fully burdened cost (i.e., any out-of-pocket expenses to be paid to Third Party service providers and Ionis' FTE Costs) expected to be incurred in connection with conducting such IND-Enabling Toxicology Study and the Parties will agree, through the JSC, upon a budget for such IND-Enabling Toxicology Study (such JSC-approved costs, the "***IND-Enabling Toxicology Costs***"). Ionis will submit invoices to Praxis for (a) the amount that is [***] of the total amount of the IND-Enabling Toxicology Costs promptly following Ionis' execution of the contract with the applicable vendor for any IND-Enabling Toxicology Study, and (b) the remaining amount of such IND-Enabling Toxicology Costs once Ionis sends to Praxis the Draft Report with respect to such IND-Enabling Toxicology Studies. In each case, Praxis will pay to Ionis all IND- Enabling Toxicology Costs set forth in any such invoice within [***] following Praxis' receipt of such invoice. Ionis will have no obligation to perform any work on any IND-Enabling Toxicology Study, and Praxis will have no obligation to reimburse Ionis for any IND-Enabling Toxicology Costs, unless the JSC has approved the budget for the IND-Enabling Toxicology Study.

3.7 **Clinical Development Plan**. Within [***], the JSC will propose and agree on a high-level clinical development plan and regulatory strategy for any potential Development Candidate through completion of the first Pivotal Study, which plan may include activities related to the identification of biomarkers, natural history studies and endpoint development, if determined by the JSC (such plan the "***Clinical Development Plan***"). Praxis will propose the initial draft of such Clinical Development Plan to the JSC for review, comment and approval. Any such initial draft of the Clinical Development Plan will include the information set forth on SCHEDULE 3.7. If the JSC cannot agree upon the Clinical Development Plan, the matter will be referred to the Senior Representatives for resolution. Subject to Section 4.1.4(b) (but only with respect to [***]), if the Senior Representatives cannot agree on the Clinical Development Plan within [***] after the matter is so referred, Praxis will have final decision-making authority with respect to the [***].

3.7.1 **Biomarker, Endpoint and Natural History Work**. If the JSC agrees to include biomarker work, any natural history study or endpoint development in the Clinical Development Plan, then Praxis will be responsible for performing such biomarker work, natural history study or endpoint development.

3.7.2 **Communications Regarding Clinical Development Plan Data**. Prior to the Initiation of the first Clinical Study under the Clinical Development Plan, the

Parties will mutually agree on a communication plan regarding the public disclosure of data and results arising from activities to be conducted under the Clinical Development Plan. If the Parties cannot agree on such a communication plan, then neither Party will have final decision-making authority regarding any such communications occurring prior to Option exercise, and Praxis will have final decision-making authority regarding any such communications occurring after Option exercise.

3.8 **Development of [***]**. Praxis will have the right (but not the obligation) at any time after Praxis exercises the Option under Section 5.1 until [***], to [***] the [***]. If Praxis seeks to [***] the [***], then Praxis will notify Ionis and such [***]. If the Parties mutually agree that Praxis may [***] the [***], then the Parties will, as soon as practicable but no later than [***] after agreeing to such [***], negotiate an appropriate amendment of this Agreement. Prior to Praxis' initiation of any [***], Praxis will notify Ionis of [***] provide the JSC with drafts of [***] ("[***]") and a [***] ("[***]") for such [***]. The contents of the [***] and the [***] will be similar to the contents of the [***]. The JSC will be responsible for reviewing and approving the [***] and the [***], and any updates or amendments thereto, proposed by Praxis. If the JSC cannot agree upon any aspect of the [***] or the [***] or any update or amendment thereto, the matter will be referred to the Senior Representatives for resolution. If the Senior Representatives cannot agree on the [***] or the [***] within [***] after the matter is so referred, then Ionis will have final decision-making authority with respect to [***], *provided that* Ionis' decision is consistent with the choices Ionis makes for its other similar programs, and Praxis will have final decision-making authority with respect to (a) [***] and (b) [***], in each case except as set forth in Section 4.1.4(b) with respect to matters arising after Praxis' exercise of the Option. As between the Parties, Praxis will be solely responsible, at its own cost and expense, for [***].

3.9 **Participation in Meetings Sponsored by a Party's Clinical Development Group**. Each Party will provide the other Party with an invitation to attend, at the other Party's own cost and expense, and allow such other Party to participate in, any meetings held by a Party's clinical advisory board or similar external medical advisory group, if any, which are scheduled to cover topics relating specifically to the Development Candidate or the conduct or design of any Clinical Study, including any natural history studies; *provided*, *however*, that such Party may exclude the other Party from any portions of such meetings that do not pertain to the Development Candidate or supportive Clinical Studies (including natural history studies); and *provided*, *further*, that the Party holding the meeting will endeavor to structure such meetings that discuss topics unrelated to the Development Candidate in a manner that permits the other Party to attend (*e.g.*, structuring the agenda of such meeting so that the Development Candidate is discussed first so that the other Party may attend that portion of such meeting only). With respect to any such meetings held by a Party, the other Party will comply with such Party's internal policies disclosed to the other Party regarding attendance and participation in such meetings, and the other Party will participate in such meeting in a manner that is consistent with such Party's strategy for the Development Candidate. If a Party does not attend any such meeting, [***]. Praxis' obligation under this Section 3.9 to invite Ionis to attend and participate in any meetings held by Praxis' clinical advisory board or similar external medical advisory group, if any will cease on the date [***].

3.10 **Collaboration Term**. The term for the Collaboration will begin on the Effective Date and will end on the earlier of (a) the [***] anniversary of the Effective Date, (b) the date Praxis exercises its Option and pays the License Fee in accordance with Section 5.2, and (c) the date the Option expires unexercised (the "***Collaboration Term***").

3.11 **Expiration of Collaboration Term**. At the end of the Collaboration Term, other than as provided under this Agreement or mutually agreed in writing by the Parties, neither Ionis nor Praxis will have an obligation to perform any additional activities. For the avoidance of doubt, if Ionis, despite using Commercially Reasonable Efforts, has not identified a Development Candidate by the end of the Collaboration Term, then the Parties will no longer have an obligation to perform any activities under this Agreement and the Agreement may be terminated pursuant to Section 13.2.5.

3.12 **Materials Transfer**. To facilitate the activities under the Research Plan or the Development Candidate Identification Plan, either Party may provide to the other Party certain materials for use by the other Party in furtherance of the conduct of the activities under the Research Plan or the Development Candidate Identification Plan, as applicable. All such materials will be used by the receiving Party in accordance with the terms and conditions of this Agreement solely for purposes of exercising its rights and performing its obligations under this Agreement, and the receiving Party will not transfer such materials to any Third Party unless expressly contemplated by this Agreement or upon the written consent of the supplying Party.

THE MATERIALS ARE PROVIDED "AS IS" AND WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY WARRANTY THAT THE USE OF THE MATERIALS WILL NOT INFRINGE OR VIOLATE ANY PATENT OR OTHER PROPRIETARY RIGHTS OF ANY THIRD PARTY.

3.13 **Applicable Laws; Books and Records**. Each Party will conduct, and will cause its employees and subcontractors to conduct, the activities for which it is responsible under this Agreement in good scientific manner and in compliance with good laboratory and clinical practices, cGMP and Applicable Law. Each Party will maintain, consistent with its then-current internal policies and practices, and cause its employees and subcontractors to maintain, consistent with its internal policies and Applicable Law, for at least ten years, records and laboratory notebooks, inventory, purchase and invoice records and Manufacturing records, in each case, with respect to Products in sufficient detail and in a good scientific manner appropriate for (a) inclusion in filings with Regulatory Authorities for such Products and (b) obtaining and maintaining intellectual property rights and protections, including Patent Rights for such Products. Such records and laboratory notebooks will be complete and accurate in all material respects and will fully and properly reflect all work done, data and developments made, and results achieved. Each Party will allow the other Party, to the extent necessary for such regulatory or intellectual property protection purposes, to inspect or copy such records, subject to reasonable redaction by such Party.

ARTICLE 4.
GOVERNANCE

4.1 Joint Steering Committee.

4.1.1 Establishment. Within [***], Praxis and Ionis will establish a joint steering committee (the "***JSC***") to oversee, review, monitor, coordinate and, where specified in Section 4.1.2, approve the activities of the Parties under this Agreement through [***] and serve as a forum for the exchange and discussion of information with respect thereto. Each Party will bear its own costs associated with its members attending JSC meetings. Ionis will have the right, but not the obligation, to participate in the JSC during the period starting on the [***] and ending on the [***]. If Ionis chooses not to participate, then Ionis will notify Praxis promptly of its decision and Praxis may dissolve the JSC at any time thereafter.

4.1.2 Responsibilities. SCHEDULE 4.1.2 sets forth certain JSC governance matters agreed to as of the Effective Date. Without limiting any of the foregoing, and subject to Section 4.1.4, the JSC will be responsible for the following functions:

(a) overseeing, reviewing monitoring and coordinating the Parties' activities under this Agreement;

(b) reviewing and approving any updates to the Research Plan;

(c) reviewing and approving the Development Candidate Identification Plan, including updates thereto, as described in Section 3.5.1;

(d) reviewing the overall progress of Ionis' efforts to discover, identify, optimize and select the Development Candidate;

(e) proposing and approving the IND-Enabling Toxicology Plan for the Development Candidate [***], as applicable;

(f) agreeing on the IND-Enabling Toxicology Costs pursuant to Section 3.6.2;

(g) proposing and approving the initial Clinical Development Plan, including any biomarker, endpoint and natural history work to be performed in the Clinical Development Plan, and any updates thereto, as described in Section 3.7;

(h) agreeing on any [***], and any updates thereto, proposed by Praxis;

(i) establishing teams and committees to oversee and manage activities after Development Candidate designation as it deems necessary through [***];

(j) establishing, reviewing and approving the Technology Transfer Plan pursuant to Section 7.8, and any amendments thereto; and

(k) undertaking or approving such other matters as are specifically provided for the JSC under this Agreement or as may be assigned to the JSC by mutual agreement of the Parties pursuant to this Agreement.

4.1.3 **Membership**. The JSC will be comprised of an equal number of members from each of Ionis and Praxis, and unless otherwise agreed such number will be three members from each of Ionis and Praxis. Each JSC member will have experience and expertise appropriate for the stage of development of the collaboration described herein. Either Party may replace its respective JSC members at any time with prior notice to the other Party, provided that such replacement is of comparable authority and scope of functional responsibility within that Party's organization as the individual he or she is replacing. Each Party will designate one of its representatives who is empowered by such Party to make decisions related to the performance of such Party's obligations under this Agreement to act as the co-chair of the JSC (each, a "***Co-Chairperson***"). The Co-Chairpersons will be responsible for calling meetings, preparing and circulating an agenda in advance of each meeting (any such agenda will include every matter requested by either Party), and preparing minutes of each meeting within [***] thereafter. Two (2) representatives of RogCon will be invited to attend, at their own expense, any meetings of the JSC and will be allowed to participate in such meetings as non-voting observers.

4.1.4 **Decision Making**. Decisions of the JSC will be made by unanimous agreement of the members representing Praxis and Ionis who are present in person or by other means (e.g., teleconference) at any meeting of the JSC, with each Party's representatives having, collectively, one vote. At any given meeting of the JSC, a quorum will be deemed to have been reached if a voting representative of each of Praxis and Ionis is present in person or by other means at such meeting. No action taken at any meeting of the JSC will be effective unless there is a quorum at such meeting. Unless otherwise specified in this Agreement, no action will be taken with respect to a matter for which the JSC has not reached unanimous consensus. The members of the JSC will at all times use good faith efforts to reach consensus on matters properly before the JSC; however, in the event that the JSC is unable to reach consensus with respect to a particular matter despite such good faith efforts, then either Party may, by written notice to the other, refer the matter to the Senior Representatives of the Parties for resolution by good faith discussions for a period of at least [***]. A senior representative of RogCon will be invited to attend any such discussions scheduled by the Senior Representatives. In the event that the Senior Representatives of the Parties are unable to reach agreement with respect to such matter within [***] after the matter is first referred to them, then, except as specified otherwise in ARTICLE 3 and Section 4.1.5:

(a) Ionis will have final decision-making authority prior to Praxis' exercise of the Option; and

(b) Praxis will have final decision-making authority upon and after Praxis' exercise of the Option, except with respect to [***], in which case either Party may initiate expert review under Section 4.1.4(c) with respect to such issue by providing written notice of its election to the other Party, and during the pendency of such resolution, the Parties will not conduct any activity that is the subject of the dispute.

(c) If either Party provides written notice to the other Party of initiation of expert review with respect to any dispute pursuant to Section 4.1.4(b), the Parties will appoint a single expert who will be neutral, disinterested and impartial, and who has significant relevant experience in nonclinical or clinical development (as applicable) of pharmaceutical products and is reasonably acceptable to both Parties, within [***] of the issue date of such written notice. Within [***] of such appointment, each Party will simultaneously provide to the expert and to the other Party such Party's proposal with respect to the unresolved issue (*i.e.*, such Party's proposal with respect to the applicable issue within the JSC's purview pursuant to Section 4.1.2) and such Party's written arguments with respect thereto. The expert will make a final decision with respect to any such matter within [***] after the date of receipt of both Parties' proposals and arguments, if any, with respect to such matter, *provided* that the expert may only choose one of the proposals presented by a Party in its entirety, and will not have the discretion to make any other judgment with respect to such matter. Each Party will bear its own attorney's fees, costs, and disbursements arising out of the expert review process, and will pay an equal share of the fees and costs of the expert.

4.1.5 Notwithstanding Section 4.1.4, neither Party will have any authority or right to amend or modify the Research Plan, the Development Candidate Identification Plan, the Clinical Development Plan or the Technology Transfer Plan in any manner that would materially expand the scope of the other Party's obligations, including the amount, type or timing of any payments which a Party is obligated to make to the other Party or to any Third Party pursuant to any such plan, and/or materially delay the projected timelines thereunder. Notwithstanding anything herein to the contrary, the JSC will not have any authority or right (a) to modify, amend or waive any term or condition of this Agreement, (b) to determine any issue in a manner that would conflict with any term or condition of this Agreement, or (c) to make any determination that any Party is in breach of this Agreement. Except as otherwise expressly stated in this Agreement, the JSC will have no decision-making authority and will act as a forum for sharing information about the activities conducted by the Parties hereunder and as an advisory body, in each case only on the matters described in, and to the extent set forth in, this Agreement.

4.2 **Day-to-Day Responsibilities**. Each Party will: (a) be responsible for day-to-day implementation and conduct of the activities hereunder for which it has or is otherwise assigned responsibility under this Agreement, provided that such implementation is not inconsistent with the express terms of this Agreement or the decisions of the JSC within

the scope of its authority as provided herein; and (b) provide the other Party with information about material events related to the progress of such activities, as may be reasonably requested by the other Party from time to time.

4.3 **Alliance Managers**. Each Party will appoint a representative to act as its alliance manager under this Agreement (each, an "***Alliance Manager***"). Each Alliance Manager will be responsible for supporting the JSC and performing the activities listed in SCHEDULE 4.3.

ARTICLE 5.
EXCLUSIVE OPTION

5.1 **Option and Option Deadline**. Ionis hereby grants to Praxis an exclusive option to obtain the rights and licenses set forth in Section 7.1 with respect to the Development Candidate [***], subject to this ARTICLE 5 (the "**Option**"). Praxis may exercise the Option at any time on or before [***] (the "**Option Deadline**") by issuing to Ionis a written notice of its decision to exercise the Option, including the [***]; *provided that* if Praxis notifies Ionis in writing prior to the Option Deadline that it wishes to extend the Option Deadline [***]. The Parties acknowledge that the Option Deadline is also subject to extension pursuant to Section 17.1.2(b).

5.2 **Exercise**. If Praxis notifies Ionis in writing by the Option Deadline (including as it may be extended in accordance with Section 5.1) that Praxis is exercising the Option, Praxis will contemporaneously pay Ionis the License Fee set forth in Section 9.1.1.

5.3 **No Exercise**. If Praxis does not provide timely written notice and payment of the License Fee to Ionis under Section 5.2 prior to the Option Deadline, then Praxis' Option will expire. In such a case:

5.3.1 Praxis will have no further rights to (and Ionis will have no further obligations with respect to) the Development Candidate or any [***];

5.3.2 Praxis will promptly provide to Ionis (to the extent not previously provided) copies of all data, results and information that it has generated before or during the Agreement Term under the Research Plan, the Development Candidate Identification Plan or the Clinical Development Plan;

5.3.3 Effective on the date Praxis' Option expires:

(a) Praxis will, and does hereby, grant to Ionis a sublicensable, worldwide, royalty-free, fully paid up, non-exclusive license or sublicense, as the case may be, to (i) any Collaboration Patents Controlled by Praxis and (ii) any Praxis Background Patents that Cover any invention or technology that [***], to develop, manufacture and otherwise commercialize the Development Candidate and any [***] in the Field and for the Treatment of [***];

(b) at any time [***] (the "***Praxis Background Patents ROFN Period***"), if (i) Praxis receives an offer from a Third Party to exclusively license any of the

Praxis Background Patents in any part of the remainder of the Competing Field that the Praxis Board of Directors intends to accept, or (ii) the Praxis Board of Directors decides to license to or develop with a Third Party a product in the Competing Field that practices any of the claims within the Praxis Background Patents, Praxis will provide written notice to Ionis, and Praxis and Ionis will negotiate in good faith for a period not to exceed [***] for a license to the Praxis Background Patents to develop and commercialize the Development Candidate (and any [***]) in the remainder of the Competing Field, *provided that* during the [***] following the Praxis Background Patents ROFN Period, Praxis will not enter into any such license agreement with a Third Party or an Affiliate on terms that are less favorable in the aggregate to Praxis than the terms last offered to or by Ionis in writing;

(c) if Praxis grants a Third Party a non-exclusive license under any of the Praxis Background Patents in any part of the remainder of the Competing Field at any time during the [***], then Praxis will notify Ionis in writing and will offer Ionis a non-exclusive license, on the same terms and conditions as such Third Party, to develop and commercialize the Development Candidate (and any [***]) in the same field of use granted to the Third Party licensee; and

(d) the Agreement will expire.

5.3.4 If the Parties cannot reach agreement during the negotiation period set forth in Section 5.3.3(b), which period can be extended by mutual agreement of the Parties, or if Ionis does not exercise its right to negotiate under Section 5.3.3(b) in a timely manner or take the non-exclusive license under Section 5.3.3(c), then Praxis will have no further obligation to license the Praxis Background Patents to Ionis in the remainder of the Competing Field.

5.4 **Transfer of Option to RogCon**. The Parties acknowledge that Praxis may transfer the Option, along with all of the rights and obligations ancillary to the exercise of the Option set forth in this ARTICLE 5, to RogCon in connection with an authorized assignment of this Agreement to RogCon in accordance with Section 17.1.2(b). From and after the effective date of any authorized assignment of the Agreement to RogCon, all of Praxis' rights and obligations associated with the exercise of the Option under ARTICLE 5, including the right to extend the Option Deadline under Section 5.1, will inure solely to RogCon instead of to Praxis. For clarity, if the Option is assigned to RogCon and RogCon exercises the Option prior to the Option Deadline, then Praxis will not be obligated to grant the license to Ionis under Section 5.3.3 under any circumstances.

5.5 **Assignment of RogCon In-License Agreement**. Without limiting Praxis' obligations under Section 5.3.3, if the Option expires unexercised under any circumstance, then upon the effective date of expiration of the Option, Praxis will, upon the written request of Ionis, assign the RogCon In-License Agreement to Ionis.

ARTICLE 6.
EXCLUSIVITY COVENANTS

6.1 Exclusivity Covenants.

6.1.1 **Before Delivery of Development Candidate Data Package**. Except as set forth in Section 6.1.4, Section 6.1.5 and Section 7.2, before Ionis delivers the Development Candidate Data Package to the JSC pursuant to Section 3.5.2, neither Ionis nor Praxis will work independently for or with any of its respective Affiliates or any Third Party (including the grant of any license to or otherwise authorize or assist any Third Party) with respect to the Discovery, development or commercialization (or the manufacture for the purpose of development or commercialization) of an ASO that is designed to bind to the mRNA or pre- mRNA and down-regulate the expression of SCN2A gene products in the Field or the Competing Field until the earlier of the date (x) [***] (y) [***] and (z) [***].

6.1.2 **During the Negotiation Period**. Except as set forth in Section 6.1.4, Section 6.1.5 and Section 7.2, during the Negotiation Period, neither Ionis nor Praxis will work independently for or with any of its respective Affiliates or any Third Party (including the grant of any license to or otherwise authorize or assist any Third Party) with respect to the Discovery, development or commercialization (or the manufacture for the purpose of development or commercialization) of an ASO that is designed to bind to the mRNA or pre-mRNA and down-regulate the expression of SCN2A gene products in the Field or the [***] until the earlier of the date (w) [***], (x) [***], (y) [***] and (z) [***].

6.1.3 **After the Expiration of the Negotiation Period**. Except in the performance of its obligations or exercise of its rights under this Agreement and except as set forth in Section 6.1.4, Section 6.1.5 and Section 7.2, after the expiration of the Negotiation Period, neither Ionis nor Praxis will work independently for or with any of its respective Affiliates or any Third Party (including the grant of any license to or otherwise authorize or assist any Third Party) with respect to:

(a) the development of an ASO that is designed to bind to the mRNA or pre-mRNA and down-regulate the expression of SCN2A gene products in the Field until the earlier of (i) [***] and (ii) [***]; and

(b) on a country-by-country basis, the commercialization of an ASO that is designed to bind to the mRNA or pre-mRNA and down-regulate the expression of SCN2A gene products in the Field, until the earlier of (i) [***] and (ii) [***].

6.1.4 In addition, except as set forth in Section 6.1.5(a), Section 6.1.5(b) and Section 6.1.5(c), under no circumstances, may Ionis develop, manufacture or commercialize the Development Candidate, the [***] or any Product for any indication in any field of use, whether inside or outside the Field or the Competing Field, during the Agreement Term.

6.1.5 Limitations and Exceptions to the Exclusivity Covenants. Notwithstanding anything to the contrary in this Agreement, a Party's practice of the following will not violate Section 6.1.1, Section 6.1.2 or Section 6.1.3:

(a) such Party's performance of its activities and fulfillment of its obligations under this Agreement;

(b) performance of any activities or fulfillment of any obligations under a Prior Agreement (*provided that* for purpose of this Section 6.1.5(b) being an exception to Section 6.1.4, Prior Agreements will not include the agreement between Ionis and Alnylam listed in Appendix 2);

(c) the granting of, or performance of obligations under, Permitted Licenses; and

(d) any activities pursuant to Section 7.2.2(d) below.

6.2 **Effect of Exclusivity on Indications**. The Product will be designed to bind to the mRNA or pre-mRNA and down-regulate the expression of SCN2A gene products, which gene is known to play a role in epilepsy. Ionis and Praxis are subject to exclusivity obligations under Section 6.1; *however*, the Parties acknowledge and agree that each Party (on its own or with a Third Party) may continue to develop, manufacture and commercialize products that are designed to bind to the mRNA or pre-mRNA of any gene that is ***not*** SCN2A for any indication, or are designed to up-regulate the expression of SCN2A gene products, and further, that Ionis and Praxis each may continue to develop, manufacture and commercialize products that are designed to bind to the mRNA or pre-mRNA of SCN2A for any indication outside both the Field and the Competing Field. However, if Praxis exercises its right to expand the Field to encompass the Competing Field in accordance with Section 7.2, then Ionis and Praxis each may continue to develop, manufacture and commercialize products that are designed to bind to the mRNA or pre-mRNA of SCN2A for any indication outside the Field (as modified as a result of Praxis' exercise of such right). If Praxis does not exercise its right to expand the Field to encompass the Competing Field in accordance with Section 7.2, then Ionis may develop, manufacture and commercialize products that are designed to bind to the mRNA or pre-mRNA of SCN2A (except, during the Agreement Term, the Development Candidate, the [***] and any Product) for any indication outside the Field.

ARTICLE 7.
LICENSE GRANT, RIGHT OF NEGOTIATION, SUBLICENSE AND SUBCONTRACT

7.1 **Development and Commercial License Grants**. Subject to the terms and conditions of this Agreement, effective upon Praxis' timely exercise of its Option and payment of the License Fee under Section 9.1.1, Ionis grants to Praxis:

7.1.1 a worldwide, royalty bearing (solely as set forth in Section 9.2), exclusive (even as to Ionis) license, with the limited right to grant sublicenses as set forth in Section 7.4 below, under Ionis' rights in the jointly owned Collaboration IP and the Ionis Product-Specific Patents and Ionis Product-Specific Know-How to Develop, make, have made, use, sell, have sold, offer for sale, import and otherwise Commercialize Products in the Field;

7.1.2 a non-exclusive, worldwide, royalty bearing (solely as set forth in Section 9.2) license, with the limited right to grant sublicenses as set forth in Section 7.4 below, under the Ionis Core Technology Patents and Ionis Core Technology Know-How to Research, Develop, make, have made, use, sell, have sold, offer for sale, import and otherwise Commercialize Products in the Field; and

7.1.3 a non-exclusive, worldwide, royalty bearing (solely as set forth in Section 9.2) license under the Ionis Manufacturing and Analytical Patents and Ionis Manufacturing and Analytical Know-How to Manufacture Products in the Field either (a) by Praxis in its own manufacturing facility(ies), (b) a CMO previously granted licenses to practice the Ionis Manufacturing and Analytical Patents, or (c) in the facility of one or more CMOs nominated by Praxis which is subsequently granted licenses by Ionis to practice the Ionis Manufacturing and Analytical Patents and Ionis Manufacturing and Analytical Know-How. At Praxis' request, Ionis will offer to grant a license to a CMO named by Praxis on no less favorable overall terms to such CMO than Ionis grants to other CMOs.

7.2 Right of Negotiation.

7.2.1 From the date Ionis delivers the Development Candidate Data Package to the JSC under Section 3.5.2 through [***] following the earlier to occur of (a) the [***] anniversary of the date that Ionis delivers the Development Candidate Data Package to the JSC pursuant to Section 3.5.2 and (b) [***] (such period, the "***Negotiation Period***"), if Praxis wishes to obtain rights and licenses under the Licensed IP to Research, Develop, Manufacture and Commercialize Products in the Competing Field, Praxis will notify Ionis in writing (the "***Praxis Negotiation Notice***"), and the Parties will negotiate in good faith commercially reasonable terms therefor for a period of not less than [***] to expand the Field to encompass the Competing Field. If the Parties are unable to agree on commercially reasonable terms for such Field expansion despite negotiating in good faith for such [***] period, then such terms will be decided in accordance with Section 7.2.2.

7.2.2 Expert Evaluation.

(a) The Parties will agree upon and select an independent Third Party expert who is neutral, disinterested and impartial, and who has significant relevant experience in the commercialization of pharmaceutical products (the "***Expert***"). If the Parties are unable to promptly agree upon an Expert, then upon request by either Party, the Expert will be appointed by the Judicial Arbitration and Mediation Services, Inc. ("***JAMS***") (or any successor entity thereto). The date on which such Expert is selected will be the "***Expert Evaluation Commencement Date***." Within [***] after the Expert Evaluation Commencement Date, each Party will prepare and deliver to the Expert and the other Party (a) its proposed terms to expand the Field to

encompass the Competing Field and (b) a memorandum (the "***Supporting Memorandum***") in support thereof. The Parties will also provide the Expert with a copy of this Agreement. Within [***] after receipt of the other Party's proposed terms and Supporting Memorandum, each Party may submit to the Expert (with a copy to the other Party) a rebuttal to the other Party's Supporting Memorandum (a "***Rebuttal***"), which may include a revision, marked to show changes, of either Party's proposed terms. Neither Party may have *ex parte* communications (either written or oral) with the Expert other than for the sole purpose of selecting the Expert or as expressly permitted under this Section 7.2.2.

(b) Within [***] after the Expert's receipt of each Party's Rebuttal (or the expiration of the period for the Parties to submit a Rebuttal), the Expert will select, between the proposals provided by the Parties, the proposal that the Expert believes most accurately reflects an equitable result for the Parties (the "***Selected Proposal***"). The Expert will not have the authority to modify a proposal submitted by a Party.

(c) The Expert will have reasonable discretion to request additional information, hold a hearing, and extend the time frame for reaching a decision regarding the Parties' competing proposals, to the extent not inconsistent with this Section 7.2.2. The Expert's fees and expenses will be paid by the Party whose proposal is not selected by the Expert. Each Party will bear and pay its own expenses incurred in connection with any proceedings under this Section 7.2.2.

(d) Praxis will have [***] following receipt of the Selected Proposal to accept the Selected Proposal by sending written notice to Ionis in accordance with Section 17.7. If Praxis fails to accept the Selected Proposal within such [***] period, (i) Praxis will have no rights under the Licensed IP to Research, Develop, Manufacture and Commercialize Products in the Competing Field, and (ii) Praxis will, and hereby does, grant to Ionis a non-exclusive, worldwide, royalty-free license, with the right to grant sublicenses, under the Collaboration Patent Rights Controlled by Praxis and the Praxis Background Patents, in each case that are necessary or reasonably useful to develop, manufacture and otherwise commercialize any product (other than any Product) for the Treatment of [***].

(i) In addition, if, at any time during the [***] after Praxis fails to accept the Selected Proposal (the "***Selected Proposal ROFN Period***"), (x) Praxis receives an offer from a Third Party to exclusively license any of the Collaboration Patent Rights Controlled by Praxis or any of the Praxis Background Patents in any part of the remainder of the Competing Field that the Praxis Board of Directors intends to accept, or (y) the Praxis Board of Directors decides to license to or develop with a Third Party a product in the Competing Field that practices any of the Collaboration Patent Rights Controlled by

Praxis or any of the Praxis Background Patents, Praxis will provide written notice to Ionis, and Praxis and Ionis will negotiate in good faith for a period not to exceed [***] for a license to such Collaboration Patent Rights Controlled by Praxis and Praxis Background Patents to develop and commercialize the Development Candidate (and any [***]) in the remainder of the Competing Field, *provided that* during the [***] following the Selected Proposal ROFN Period, Praxis will not enter into any such license agreement with a Third Party on terms that are less favorable in the aggregate to Praxis than the terms last offered to or by Ionis in writing.

(ii) Further, if Praxis grants a Third Party or an Affiliate a nonexclusive license under any of the Collaboration Patent Rights Controlled by Praxis or any of the Praxis Background Patents in any part of the remainder of the Competing Field at any time during the [***] after Praxis fails to accept the Selected Proposal, then Praxis will notify Ionis in writing and will offer Ionis a non-exclusive license, on the same terms and conditions as such Third Party or Affiliate, to develop and commercialize the Development Candidate (and any [***]) in the same field of use granted to the Third Party or Affiliate licensee.

(iii) If the Parties cannot reach agreement during the negotiation period set forth in Section 7.2.2(d)(i), which period can be extended by mutual agreement of the Parties, or if Ionis does not exercise its right to negotiate under Section 7.2.2(d)(i) in a timely manner or take the non-exclusive license under Section 7.2.2(d)(ii), then Praxis will have no further obligation to license the Praxis Background Patents or the Collaboration Patent Rights Controlled by Praxis to Ionis in the remainder of the Competing Field.

7.2.3 **Expansion of Field**. If the Parties are able to agree on the terms and conditions associated with the expansion of the Field to encompass the Competing Field within the [***] period referenced in Section 7.2.1 or the Parties are unable to agree on those terms and conditions within such [***] period and Praxis accepts the Selected Proposal in accordance with Section 7.2.2(d), then the Field will thereafter be deemed to encompass the Competing Field and the Parties will promptly execute an amendment to this Agreement as necessary to reflect the expansion of the Field pursuant to their agreement or the Selected Proposal, as applicable.

7.3 **Cross Licenses.**

7.3.1 **Enabling License to Praxis**. For so long as Praxis' Option has not expired or been terminated, and subject to the terms and conditions of this Agreement, Ionis hereby grants to Praxis a non-exclusive, worldwide license under the Ionis Core Technology Patents, the Ionis Manufacturing and Analytical Patents and Ionis Manufacturing and Analytical Know-How solely to perform Praxis' Research and Development obligations and activities under the Research Plan and Development Candidate Identification Plan prior to Option exercise.

7.3.2 **Enabling License to Ionis**. Subject to the terms and conditions of this Agreement (including Ionis' exclusivity covenants under Section 6.1), Praxis hereby grants to Ionis a non-exclusive, worldwide, royalty-free, fully paid, irrevocable license, with the right to grant sublicenses, under any Collaboration Patents Controlled by Praxis that claim inventions made by or on behalf of Praxis under the Collaboration that relate to subject matter applicable to ASO compounds in general, in each case to (x) exercise Ionis' rights and perform Ionis' obligations under this Agreement (y) research, develop, manufacture and commercialize any product containing an ASO as an active pharmaceutical ingredient, and (z) practice the Licensed IP outside of the Field and the Competing Field. For clarity, any claims within Collaboration Patents that Cover inventions made by or on behalf of Praxis under the Collaboration that solely and specifically claim the composition of matter of any Product or a product that is not an ASO that is designed to bind to the mRNA or pre-mRNA and down-regulate the expression of SCN2A gene products, or methods of using any such Product or product as a prophylactic or therapeutic in any field of use are not included within the scope of the license grant from Praxis to Ionis under this Section 7.3.2.

7.4 **Right to Grant Sublicenses**. Praxis will have the right to grant sublicenses (through multiple tiers) under the licenses granted under Section 7.1.1 and Section 7.1.2 above, *provided that* (a) each such sublicense is for the continued Research, Development and/or Commercialization of a Product, and is subject to, and consistent with, the terms and conditions of this Agreement, and (b) Praxis will not sublicense the Product prior to the [***] without Ionis' consent (such consent not to be unreasonably withheld, conditioned or delayed). Praxis will use reasonable efforts to ensure that all Persons to which it grants sublicenses comply with such terms and conditions. For the avoidance of doubt, Praxis will not have the right to grant a sublicense of any of its rights under Section 7.1.3 to any Third Party.

7.4.1 **Sublicense Notice**. Praxis will provide Ionis with prompt written notice of its grant of any sublicense pursuant to this Section 7.4. Praxis will promptly (but in no event later than [***] after the execution thereof) provide Ionis a true and complete copy of any such sublicense, *provided*, *however*, that Praxis will have the right to redact any financial terms and other technical or business information from such copy of the sublicense agreement if Praxis determines in good faith such redactions are necessary to protect any of its or its Sublicensee's confidential or proprietary information unrelated to Praxis' obligations under this Agreement.

7.4.2 Enforcing Sublicense Agreements. Praxis will inform Ionis of any material breach of any sublicense granted by Praxis pursuant to this Section 7.4 promptly after becoming aware of such breach. If such breach, in Ionis' good faith belief, is reasonably likely to (a) cause a material adverse effect on Ionis' ASO platform technology or (b) adversely affect a material right of Ionis under this Agreement, Ionis may request Praxis to enforce the terms of such sublicense. If Praxis fails to

take any action to enforce the terms of such sublicense, including causing its Sublicensee to cure the breach, within [***] after Ionis' request, Praxis will and hereby does, grant to Ionis the right to enforce such sublicense terms on Praxis' behalf and will otherwise cooperate with Ionis (upon Ionis' reasonable request) in connection with enforcing such terms.

7.5 **No Implied Licenses**. All rights in and to Licensed IP not expressly licensed to Praxis under this Agreement are hereby retained by Ionis or its Affiliates. Except as expressly provided in this Agreement, no Party will be deemed by estoppel or implication to have granted the other Party any license or other right with respect to any intellectual property.

7.6 **License Conditions; Limitations**. The licenses granted under Section 7.1 and Section 7.3 and the sublicense rights under Section 7.4 are subject to and limited by (a) the Prior Agreements, (b) the Ionis In-License Agreements, and (c) the granting of, or performance of obligations under, Permitted Licenses.

7.7 **Subcontracting**. Subject to the terms of this Section 7.7, each Party will have the right to engage Third Party subcontractors to perform certain of its obligations under this Agreement. Any subcontractor to be engaged by a Party to perform such Party's obligations set forth in this Agreement will meet the qualifications typically required by such Party for the performance of work similar in scope and complexity to the subcontracted activity and will enter into a written agreement consistent with the terms of this Agreement, including intellectual property ownership and confidentiality provisions consistent with those set forth in ARTICLE 10 and ARTICLE 15. Any Party engaging a subcontractor hereunder will remain responsible and obligated for such activities and will not grant rights to such subcontractor that interfere with the rights of the other Party under this Agreement.

7.8 **Technology Transfer.**

7.8.1 **Licensed Know-How Transfer**. Promptly following Praxis' exercise of the Option in accordance with Section 5.1, the Parties (by and through the JSC) will establish and approve a plan and budget pursuant to which Ionis will perform a technology transfer to Praxis of all Licensed Know-How (other than the Ionis Manufacturing and Analytical Know-How) for use solely in accordance with the licenses granted by Ionis to Praxis hereunder (the "***Technology Transfer Plan***"). The Technology Transfer Plan will set forth the type, name and quantity of any Know-How transferred and the anticipated timelines for completing such transfer.

7.8.2 **Technology Transfer Assistance**. In accordance with the Technology Transfer Plan, and subject to Section 7.8.3, Ionis will provide reasonable technical assistance to Praxis, at Praxis' request, to the extent necessary or useful to exercise the rights and solely for use in accordance with the licenses granted by Ionis to Praxis hereunder (collectively, the "***Technology Transfer Activities***"). Ionis will perform the Technology Transfer Activities using Commercially Reasonable Efforts to accomplish such activities in an efficient and timely manner in accordance with the Technology Transfer Plan (including the budget therefor). The Parties (through the JSC, to the extent it is then-existing) may from time to time review and approve amendments to the Technology Transfer Plan, based on changes in circumstances.

7.8.3 **Technology Transfer Costs**. Ionis will perform the Technology Transfer Activities under Section 7.8 for up to [***] ([***] to Praxis) of Ionis' time. Thereafter, if reasonably requested by Praxis, Ionis will provide Praxis with a reasonable level of assistance in connection with such transfer, and Praxis will reimburse Ionis for Ionis' time incurred in providing such assistance at Ionis' then-current FTE rate and will reimburse Ionis for its reasonable out-of-pocket costs incurred in connection therewith upon receipt of an invoice for such time and costs.

ARTICLE 8.
DEVELOPMENT AND COMMERCIALIZATION

8.1 **Right and Responsibility**. Subject to the terms and conditions of this Agreement, commencing on the date Ionis grants Praxis the license under Section 7.1, Praxis, directly or through its Affiliates or Sublicensees, will control and be solely responsible for, at its expense, Researching, Developing, Manufacturing and Commercializing Products worldwide in the Field. Praxis, directly or through its Affiliates or Sublicensees, will use Commercially Reasonable Efforts to Develop and Commercialize Products in the Field in the Major Markets, including by allocating financial resources consistent with such Commercially Reasonable Efforts.

8.2 **Integrated Product Plans**. Within [***], Praxis will prepare and provide to Ionis an integrated Product plan outlining key aspects of the Product Development (including CMC-related matters) as well as key aspects of its regulatory strategy, market launch and Commercialization (including annual sales forecasts) (such plan, an "***Integrated Product Plan***" **or** "**IPP**"), which plan will include the components set forth in SCHEDULE 8.2. Once Praxis has prepared the initial IPP, Praxis will update the IPP annually; *provided*, *however*, reports on these topics prepared by Praxis for internal management purposes will be sufficient to satisfy this updating obligation, in which case Praxis may redact information that is unrelated to the Product. Praxis and Ionis will meet on a [***] basis to discuss the updated IPP provided by Praxis to Ionis pursuant to the prior sentence. Praxis will consider, in good faith, any proposals and comments made by Ionis for incorporation in the IPP. In addition, upon reasonable request of Ionis (but in no event more than once per Calendar Quarter) following the dissolution of the JSC, Praxis will make a senior member of its commercial leadership team available at least [***] in advance of Ionis' quarterly earnings release (provided Ionis has given Praxis the expected date of each such earnings release), to answer questions from Ionis' Alliance Manager related to any material changes that may have occurred to the IPP, or otherwise to Praxis' commercialization or regulatory strategy with respect to the Product, since the last [***] update of the IPP was provided to Ionis. The Parties' Alliance Managers will coordinate and plan such meetings.

8.3 **Performance Milestones for Development Activities**.

8.3.1 **Timelines**. Praxis will perform the following Development activities for the Product on the following timelines (each, a "*Performance Milestone*").

(a) within [***] from the Option exercise, submit an IND to the FDA;

(b) within [***] following IND approval, Initiate a Phase 1/2 Study;

(c) within [***] following the successful completion of a Phase 1/2 Study, Initiate a Pivotal Study or extend the Phase 1/2 Study into a Pivotal Study for such Product; and

(d) within [***] following successful completion of the Pivotal Study, file an NDA.

8.3.2 **Extension of Timelines**. If regulatory or Development issues outside of Praxis' reasonable control arise that make any of the Performance Milestones in Section 8.3.1 not reasonably possible or likely for Praxis to achieve, then Praxis will provide notice to Ionis and the Parties will meet to discuss in good faith and agree on a reasonable extension of the timeline(s) for achievement of the Performance Milestones. The Parties will discuss the proposed timelines in good faith and, if necessary, agree on a revised date by which the applicable Performance Milestones will be achieved. If the Parties cannot in good faith agree on an extension of the timeline(s), then either Party may refer the matter to the Senior Representatives for resolution in accordance with Section 17.4.1. If the Senior Representatives are not able to agree on an extension of the timeline(s) for achievement of the Performance Milestones within [***] of referral to the Senior Representatives, then either Party may initiate dispute resolution in accordance with Section 8.3.3.

8.3.3 **Dispute Resolution for Timeline Extension**. If either Party provides written notice to the other Party of initiation of dispute resolution with respect to a dispute pursuant to Section 8.3.2, the Parties will appoint a single expert who will be neutral, disinterested and impartial, and who has significant relevant experience in pharmaceutical development or regulations, as applicable, of pharmaceutical products and is reasonably acceptable to both Parties, within [***] of the issue date of such written notice. Within [***] of such appointment, each Party will provide to the expert and to the other Party such Party's proposal with respect to the timeline(s) for achievement of the Performance Milestones and such Party's written arguments with respect thereto. The expert will make a final decision with respect to any such matter within [***] after the date of receipt of both Parties' proposals and arguments, if any, with respect to such matter, *provided that* the expert may only choose one of the proposals presented by a Party in its entirety, and will not have the discretion to make any other judgment with respect to such matter. Each Party will bear its own attorneys' fees, costs and disbursements arising out of dispute resolution under this Section 8.3.3, and will pay an equal share of the fees and costs of the expert. If Praxis does not achieve a Performance Milestone as modified under this Section 8.3.3, then Ionis may terminate this Agreement pursuant to Section 13.2.2.

8.4 **Regulatory Matters; Global Safety Database; Pharmacovigilance Agreement.**

8.4.1 **IND-Holder**. Subject to this Section 8.4, Praxis will be the IND-holder and will be responsible for all communications with Regulatory Authorities regarding the Product.

8.4.2 **Pharmacovigilance Agreement**. If, at any time during the Term, the pharmacovigilance departments of each of Ionis and Praxis determine that it is necessary for the Parties to enter into a separate pharmacovigilance agreement in order to fulfill their respective local and international regulatory reporting obligations to Regulatory Authorities and other Applicable Law with respect to the collection, review, assessment, tracking, exchange and filing of information related to adverse events associated with the Product, then the Parties will negotiate in good faith and enter into a pharmacovigilance agreement which is consistent with such reporting obligations.

8.4.3 **Regulatory Communications Regarding Clinical Study Trial Designs**.

(a) Praxis will not initiate discussions with a Regulatory Authority regarding the design of any Clinical Study until the design of such Clinical Study has been established pursuant to Section 3.7, as applicable.

(b) Praxis will promptly provide Ionis with (i) final copies of all material submissions to any Regulatory Authority related to the Product promptly following submission thereof, (ii) a copy of material communications received from a Regulatory Authority related to the Product, and (iii) a copy of the minutes from each meeting with a Regulatory Authority related to the Product.

(c) Praxis will provide Ionis with a draft of all submissions to any Regulatory Authority that materially impact the design of a Clinical Study or the Development or Commercialization of a Product sufficiently in advance of providing such submission to the applicable Regulatory Authority to enable Ionis to have a meaningful opportunity to provide comments on the contents thereof and Praxis will [***], but, except as provided in Section 8.4.6, will have final-decision making authority with respect to [***]. If Ionis has provided Praxis with comments on any submission to a Regulatory Authority pursuant to this Section 8.4.3(c), then Praxis will provide Ionis with a copy of the final version of such submission prior to submitting it to the applicable Regulatory Authority.

8.4.4 **Participation in Regulatory Meetings**.

(a) Praxis will provide Ionis with as much advance notice as practicable of any meetings that Praxis has or plans to have with a Regulatory Authority in Major Market countries regarding pre-approval or Approval matters for a Product, and will invite up to two representatives of Ionis to participate in any such meetings under the direction of Praxis; *provided*, *however*, that, Praxis may exclude Ionis from any portion of such meeting that does not

pertain to the Product or to Ionis' antisense oligonucleotide chemistry platform. In addition, Praxis will provide Ionis with as much advance notice as practicable of any meetings that Praxis has or plans to have with a Regulatory Authority that directly relate to Ionis' antisense oligonucleotide chemistry platform and will invite up to two Ionis representatives to participate in any such meetings [***].

(b) Without limiting Section 8.4.4(a), to the extent practicable , prior to any scheduled meeting with a Regulatory Authority regarding pre-approval or Approval matters for a Product, (i) the JSC will discuss and mutually agree upon the approximate timing and objectives for such meeting, and (ii) Praxis will provide Ionis with an invitation to attend at least one premeeting rehearsal with Praxis and an opportunity to discuss with Praxis the strategy for such meeting.

8.4.5 **CMC Information and Assistance**. Upon Praxis' reasonable request and subject to Section 7.8.3, Ionis will provide Praxis with additional information and assistance to support the preparation, filing or defense of any Approval for the Product, including assisting Praxis in responding to inquiries of Regulatory Authorities related thereto.

8.4.6 **Class Generic Claims**. To the extent Praxis intends to make any claims in a Product label or regulatory filing that are class generic to ASOs or any of Ionis' technology incorporated into the Product, Praxis will provide such claims and regulatory filings to Ionis as far in advance as reasonably possible. Praxis will incorporate all reasonable proposals and comments made by Ionis. If Praxis reasonably believes that any of Ionis' proposals and comments are unreasonable, Praxis will notify Ionis in writing as far in advance as reasonably practicable prior to submitting such claims and regulatory filings to any Regulatory Authority. If the Parties cannot agree upon any Ionis proposal or comments within [***] of Praxis' notice, then either Party may refer the matter to the Senior Representatives for resolution. The Senior Representatives will meet in person or by teleconference as soon as reasonably possible thereafter and will use their good faith efforts to agree on the Ionis proposals and comments that are mutually acceptable. Praxis will use its best efforts to negotiate a Product label based on the agreements reached by the Senior Representatives. If the Regulatory Authority rejects the Product label proposed by Praxis, then Praxis will have final decision-making authority with respect to [***].

8.4.7 **Ionis' Antisense Safety Database**.

(a) Ionis maintains an internal database that includes information regarding the tolerability of its ASO drug compounds, individually and as a class, including information discovered during nonclinical and clinical development (the "***Ionis Internal ASO Safety Database***"). To maximize understanding of the safety profile and pharmacokinetics of Ionis compounds, Praxis will cooperate in connection with populating the Ionis

Internal ASO Safety Database. To the extent collected by Praxis and in the form in which Praxis uses/stores such information for its own purposes, Praxis will provide Ionis with information concerning toxicology, pharmacokinetics, safety pharmacology study(ies), serious adverse events and other safety information related to Products licensed by Praxis under this Agreement reasonably promptly following the date such information is available to Praxis (but not later than [***] after Praxis' receipt of such information). For any reported serious adverse event, Praxis will provide Ionis all serious adverse event reports, including initial, interim, follow-up, amended and final reports. In addition, with respect to Products, Praxis will provide Ionis with copies of Annual safety updates filed with each IND and the safety sections of any final Clinical Trial reports within [***] following the date such information is filed or is available to Praxis, as applicable. Furthermore, Praxis will promptly provide Ionis with any supporting data and answer any follow-up questions reasonably requested by Ionis. All such information disclosed by Praxis to Ionis will be Praxis Confidential Information; *provided*, *however*, that so long as Ionis does not disclose the identity of a Product or Praxis' identity, Ionis may disclose any such Praxis Confidential Information to (a) Ionis' other partners if such information is regarding class generic properties of ASOs, or (b) any Third Party. Praxis will deliver all such information to Ionis for the Ionis Internal ASO Safety Database to Ionis at 2855 Gazelle Court, Carlsbad, California 92010, Attention: Chief Medical Officer (or to such other address/contact designated in writing by Ionis). Praxis will also cause its Affiliates and use reasonable efforts to cause its Sublicensees to comply with this Section 8.4.7(a).

(b) From time to time, Ionis utilizes the information in the Ionis Internal ASO Safety Database to conduct analyses to keep Ionis and its partners informed regarding class generic properties of ASOs, including with respect to safety. As such, if and when Ionis identifies safety or other related issues that may be relevant to a Product (including any potential class-related toxicity), Ionis will promptly inform Praxis of such issues and provide the data supporting Ionis' conclusions.

8.5 **Investigator's Brochure for Products**. Once prepared, Praxis will provide to Ionis an up-to-date version of the Investigator's Brochure for the applicable Product. Praxis will provide materially updated versions (if any) of the Investigator's Brochure for each Product to Ionis Annually.

ARTICLE 9.
FINANCIAL PROVISIONS

9.1 **License Fee and Milestone Payments**.

9.1.1 **License Fee.** Praxis will pay Ionis a one-time license fee of [***] in cash contemporaneous with Praxis' exercise of the Option in accordance with Section 5.1 (the "***License Fee***").

9.1.2 **Milestone Payments for Achievement of Development Milestone Event**. For each Product, Praxis, its Affiliates or Sublicensees, as applicable, will pay Ionis a one-time milestone payment of [***] in cash upon [***] for such Product. When a milestone event is achieved under this Section 9.1.2, Praxis will send Ionis a written notice thereof promptly (but no later than [***] following the date of achievement of the milestone event. The milestone payment will be due within [***] after achievement of the milestone event.

9.1.3 **Additional Milestone Payment. In addition**:

(a) Praxis will pay Ionis a one-time milestone payment of [***] ("***Additional Milestone Payment***") in cash within [***] after the earliest to occur of the following: (i) the [***]; (ii) Praxis has both (A) received, in the aggregate, [***] in cash since the Effective Date and (B) [***] with respect to a Product; and (iii) the closing of a Change of Control (each of (i), (ii) and (iii), a "***Payment Trigger***"), *provided*, *however*, that if the Change of Control occurs prior to the expiration of the Negotiation Period, then the Additional Milestone Payment will become due and payable no later than the last day of the Negotiation Period; and *provided*, *further*, that if Praxis or the acquiring entity involved in the Change of Control, as applicable, elects to terminate this Agreement pursuant to Section 13.2.3 and such notice is issued by Praxis or the acquiring entity, as applicable, prior to the earlier of (x) the last day of the Negotiation Period and (y) the [***] following the closing of the applicable Change of Control, then this Agreement, including the obligation to pay the Additional Milestone Payment under this Section 9.1.3(a), will terminate.

(b) Subject to the occurrence of one of the Payment Triggers, Praxis will pay Ionis an amount equal to (i) [***] simple interest per annum accruing on [***] ("[***]"), calculated from the period commencing on the [***] and ending on the date that [***] plus (ii) [***]. For clarity, if the Payment Trigger is a Change of Control and Praxis timely pays the Additional Milestone Payment and the [***], then [***]. Praxis will make the [***] and the [***], [***], within [***] after the occurrence of the event pursuant to which such payment becomes payable to Ionis.

(c) Within [***], Praxis will provide to Ionis a report of the aggregate amount of cash that Praxis has received in cash since the Effective Date until such aggregate amount totals at least [***].

9.2 **Royalty Payments by Praxis to Ionis.**

9.2.1 **Full Royalty Rate**. As partial consideration for the rights granted to Praxis hereunder, subject to the provisions of this Section 9.2, Praxis will pay to Ionis royalties on the portion of Annual worldwide Net Sales of Products sold by Praxis or its Affiliates on a country-by-country and Product-by-Product basis, in each case in the amounts as follows in TABLE 1 below (the "***Full Royalty Rate***"):

TABLE 1

Royalty Tier	Portion of Annual Worldwide Net Sales of Products	Royalty Rate
1	For the portion of Annual Worldwide Net Sales < [***]	[***]
2	For the portion of Annual Worldwide Net Sales > [***]	[***]

Praxis will pay Ionis royalties on Net Sales of Products arising from named patient and other similar programs under Applicable Law providing for the delivery of Product other than at no cost, Praxis will provide reports and payments therefor to Ionis consistent with this ARTICLE 9, and such sales will count towards calculating the royalty tiers. No royalties are due on Net Sales of Products arising from named patient, compassionate use and other programs providing for the delivery of Product at no cost. The sales of Products arising from compassionate use or other similar programs will not be considered a First Commercial Sale for purposes of calculating the Royalty Period under Section

9.2.2 **Royalty Rate Buy-Down**. During the period from the Effective Date until 5:00 p.m. (Eastern) on the [***] anniversary of the [***], Praxis may, subject to Section 9.2.2(c), reduce the Full Royalty Rate [***] across all royalty tiers by delivering written notice to Ionis and concurrently making a lump sum payment to Ionis, in cash (the "***Royalty Rate Buy-Down Payment***"), as follows:

(a) [***], the Royalty Rate Buy-Down Payment will be [***]. Subject to Section 9.2.2(c), for each payment of [***], the royalty rates under Section 9.2.1 will be reduced by [***].

(b) [***], the Royalty Rate Buy-Down Payment will be [***]. Subject to Section 9.2.2(c), for each payment of [***], the royalty rates under Section 9.2.1 will be reduced by [***].

(c) In no event may Praxis buy down the Full Royalty Rate by more than [***], in the aggregate, under this Section 9.2.2.

9.2.3 **Reduction of Royalty for Competition from Generic Products**. On a country- by-country and Product-by-Product basis, if at any time during the Royalty Period, one or more Third Parties are selling one or more Generic Products during the applicable Calendar Quarter, then, subject to Section 9.2.2(c) and the limitation set forth herein, Praxis' obligation to pay royalties to Ionis under TABLE 1 of Section 9.2.1 on Net Sales of the relevant Product in such country will be reduced to the amount that is [***] of the Full Royalty Rate. If Praxis has bought down the Full Royalty Rate by the maximum [***] specified in Section 9.2.2(c), [***].

9.2.4 **Royalty Period**. Praxis' obligation to pay Ionis royalties with respect to a Product will continue on a country-by-country and Product-by-Product basis from the date of First Commercial Sale of such Product until the later of (a) the date of expiration of the last Valid Claim within the Licensed Patents Covering such Product in the country in which such Product is made, used or sold, (b) the date of expiration of the data exclusivity period conferred by the applicable Regulatory Authority in such country with respect to such Product (*e.g.*, such as in the case of an orphan drug), and (c) the [***] anniversary of the First Commercial Sale of such Product in such country (the "***Royalty Period***"). For clarity, upon expiration of the Royalty Period for a Product in a country, Praxis' Know-How licenses under Section 7.1 with respect to such Product in such country will become non-exclusive, royalty-free, fully-paid, irrevocable and perpetual. For clarity, Praxis' obligation to pay royalties to Ionis under this Section 9.2 is imposed only once with respect to the same unit of a Product, regardless of the number of Licensed Patents Covering such Product.

9.2.5 **Royalty Payments.** All payments due under Section 9.2 will be paid within [***] in which Net Sales occur.

9.3 **Third Party Payment Obligations.**

9.3.1 **In-License Agreements**.

(a) **Ionis' In-License Agreements Prior to Option Exercise**. Before Ionis enters into an in-license agreement with a Third Party that would impact the Development, Manufacture or Commercialization of a Product, Ionis will consult with Praxis and discuss the terms and conditions of such license with Praxis. Before Praxis exercises the Option, Ionis will provide to Praxis a final list of all agreements entered into after the Effective Date by Ionis with Third Party licensors or sellers under which Ionis licensed or acquired any Licensed IP to be licensed to Praxis under Section 7.1 ("***Additional Ionis In-License Agreements***"). Any payment obligations arising under any Additional Ionis In-License Agreements will be paid solely by [***] as [***].

(b) **Praxis' Existing In-License Agreements**. Praxis will be solely responsible for any obligations that become payable by Praxis to Third Parties under any agreements or arrangements Praxis has with such Third Parties as of the Effective Date, based on the Development or Commercialization of a Product by Praxis, its Affiliates or Sublicensees under this Agreement. Any such payment obligations will be paid by Praxis to such Third Parties pursuant to the applicable agreement(s). Any arrangement Praxis has with RogCon under which Praxis licenses rights that relate to or are necessary for the Development, Manufacture or Commercialization of a Product as of or after the Effective Date (including, but not limited to the RogCon In-License Agreement) will be paid solely by Praxis to RogCon pursuant to such agreement.

9.3.2 **New In-Licensed Ionis Product-Specific Patents**.

(a) After Option exercise, Praxis or Ionis, as the case may be, will provide the other Party written notice of any additional Third Party Patent Rights promptly after it has identified such Third Party Patent Rights as [***] where such Third Party Patent Rights would be considered an Ionis Product-Specific Patent if Ionis Controlled such Patent Rights("***Additional Product-Specific Patents***"), and Praxis will have the first right, but not the obligation, to negotiate with, and obtain a license from the Third Party that Controls such Additional Product-Specific Patents. If Praxis obtains any such Additional Product-Specific Patents, then any financial obligations under such Third Party agreement will be paid solely by Praxis to the Third Party.

(b) If, however, Praxis elects not to obtain such a license to such Additional Product-Specific Patents, Praxis will so notify Ionis, and Ionis may obtain such a license to such Additional Product-Specific Patents and Ionis will include such Additional Product-Specific Patents in the license granted to Praxis under Section 7.1.1, *so long as* Praxis agrees in writing to pay Ionis as Praxis Supported Pass-Through Costs any and all costs arising under such Third Party agreement as such costs apply to Products.

9.3.3 **Additional Core IP In-License Agreements**.

(a) Praxis will promptly provide Ionis written notice of any Third Party Patent Rights necessary to [***] ("***Additional Core IP***") that Praxis believes it has identified and Ionis will have the first right, but not the obligation, to negotiate with, and obtain a license from the Third Party that Controls such Additional Core IP. If Ionis obtains such a Third Party license, Ionis will include such Additional Core IP in the license granted to Praxis under Section 7.1.2, and any financial obligations under such Third Party agreement will be paid solely by [***] as [***].

(b) If, however, Ionis elects not to obtain such a license to such Third Party intellectual property, Ionis will so notify Praxis, and Praxis may obtain such a Third Party license and, subject to Section 9.3.3(d), Praxis may [***].

(c) If Ionis does not agree with Praxis that a license to such Third Party Patent Rights [***] an Ionis Core Technology Patent to Develop or Commercialize a Product, then Ionis will send written notice to such effect to Praxis, and the Parties will engage a mutually agreed independent Third Party intellectual property lawyer with expertise in the patenting of ASOs, and appropriate professional credentials in the relevant jurisdiction, to determine the question of whether such Third Party intellectual property is

Additional Core IP. The determination of the Third Party expert engaged under the preceding sentence will be binding on the Parties solely for purposes of determining whether [***]. The costs of any Third Party expert engaged under this Section 9.3.3(c) will be paid by the Party against whom the Third Party lawyer makes his or her determination.

(d) In no event will the aggregate [***] reduce the [***] to an amount that is less than the greater of (i) [***] of the [***], and (ii) [***] for such Product in such country in such period. Praxis will have the right to [***].

9.4 **Sublicense Revenue**. Praxis will not sublicense the Product prior to the [***] without Ionis' consent (such consent not to be unreasonably withheld, conditioned or delayed). On a Sublicense-by-Sublicense and country-by-country basis, if Praxis enters into a Sublicense, then [***].

9.4.1 **Sublicense Revenue Calculation.** Subject to Section 9.4.3, the calculation of such Sublicense Revenue payment is based on the stage of Development of the most advanced Product covered by the Sublicense as of the date Praxis enters into the Sublicense, as follows:

(a) Where Praxis enters into any such Sublicense before [***], Ionis will receive [***]; and

(b) Where Praxis enters into any such Sublicense after [***] but before [***], Ionis will receive [***]; and

(c) Where Praxis enters into any such Sublicense after [***], Ionis will receive [***].

9.4.2 **Sublicense Revenue Payments.** Any payment to Ionis for its portion of Sublicense Revenue is due within [***] of Praxis receiving such Sublicense Revenue; *provided*, *however*, within [***] after any Calendar Quarter in which Sublicense Revenue is earned, Praxis will send to Ionis a written statement of the amount of Ionis' portion of such Sublicense Revenue.

9.4.3 **Sublicense Revenue Limitation.** Notwithstanding anything to the contrary in this Agreement, on a Sublicense-by-Sublicense and country-by-country basis, in no event will the Sublicense Revenue payable to Ionis under this Section 9.4 for the Calendar Quarter in which such Sublicense Revenue is earned be less than the amount that is equivalent to [***] of [***].

9.5 **Priority Review Vouchers**. If, in connection with a Product, a Regulatory Authority grants Praxis credits, reduced fees, priority review or any other incentives including those offered under 21 U.S.C. § 360ff or 21 U.S.C. § 360n-l (each, a "***Regulatory Authority Incentive***")Praxis transfers such Regulatory Authority Incentive to a Third Party for consideration, then within [***] after such transfer, Praxis will pay Ionis [***]. If Praxis transfers such Regulatory Authority Incentive to a Third Party in exchange for non-cash consideration, then within [***] after such transfer, Praxis and Ionis will discuss and

mutually agree in good faith on the fair market value of such Regulatory Authority Incentive (including, if applicable, the value of any non-cash consideration received by Praxis or advantage gained by Praxis) and Praxis will pay Ionis [***] of such fair market value in cash. If Ionis and Praxis cannot agree on the fair market value of the Regulatory Authority Incentive within [***] after such transfer despite negotiating in good faith, then the matter will be decided by a Third Party expert selected by mutual agreement of the Parties whose determination will be final and binding on both Parties. If the Parties cannot agree on a Third Party expert, the dispute resolution provisions of Section 17.4 will govern.

9.6 **Payment Reports**. Each payment under Section 9.2 and each payment under Section 9.4 will be accompanied by a report summarizing Net Sales of Products during the relevant Calendar Quarter and the calculation of royalties or Sublicense Revenue, as applicable, due thereon, including country and the exchange rate used. If no royalties or Sublicense Revenue is payable in respect of a given Calendar Quarter, Praxis will submit a written report to Ionis so indicating. In addition, beginning with the Calendar Quarter in which the First Commercial Sale for a Product is made and for each Calendar Quarter thereafter, within [***] following the end of each such Calendar Quarter, Praxis will provide Ionis a [***] report estimating the total projected Net Sales of Products and the royalties and Sublicense Revenue payable to Ionis for such Calendar Quarter.

9.7 **Mode of Payment**. All payments under this Agreement will be (a) payable in full in U.S. dollars, regardless of the country(ies) in which sales are made, (b) made by wire transfer of immediately available funds to an account designated by Ionis in writing, and

(a) non-creditable, irrevocable and non-refundable. Whenever for the purposes of calculating the royalties payable under this Agreement conversion from any foreign currency will be required, all amounts will first be calculated in the currency of sale and then converted into United States dollars by using the rate used by Praxis to report its audited finances or, if not so reported, by applying the monthly average rate of exchange calculated by using the foreign exchange rates published in Bloomberg during the applicable month starting two (2) Business Days before the beginning of such month and ending two (2) Business Days before the end of such month. For clarity, any references in this Agreement to an amount paid by Praxis as being "irrevocable" will not be construed to limit Praxis' right to seek to recover or actually recover any amount of damages arising from any uncured breach of this Agreement by Ionis, subject only to the limitations and exclusions in Section 12.5.

9.8 **Records Retention**. Commencing with the First Commercial Sale of a Product, Praxis will keep, and will require its Affiliates and Sublicensees to keep (all in accordance with GAAP or IFRS, consistently applied), complete and accurate records pertaining to Net Sales and any other payment due pursuant to this ARTICLE 9 for a period of [***], and in sufficient detail to permit Ionis to confirm the accuracy of the Net Sales paid by Praxis hereunder.

9.9 **Audits of Payment Reports**. Ionis will have the right to have an independent certified public accounting firm of internationally recognized standing, reasonably acceptable to

Praxis, have access during normal business hours, and upon reasonable prior written notice, to Praxis' records as may be reasonably necessary to verify the accuracy of Net Sales and any other payment due pursuant to this ARTICLE 9, as applicable, for any Calendar Quarter or Calendar Year [***]; *provided*, *however*, that Ionis will not have the right to conduct more than [***]. The accounting firm will share all draft audit findings with Praxis and afford Praxis the ability to discuss and make any clarifications to avoid misinterpretations. The accounting firm will share such draft audit findings simultaneously with Ionis. The accounting firm will disclose to Ionis only whether the reported Net Sales and any other payments due pursuant to this ARTICLE 9 are correct and details of any discrepancies. The final audit report will be shared with Praxis at the same time it is shared with Ionis. If either Party disputes the findings of such final audit report, then the Parties will confer and resolve in good faith any such discrepancies reported in such report. Ionis will bear the cost of such audit unless the audit reveals an underreporting of more than the greater of (a) [***] and (b) [***] of amounts payable to Ionis over [***], in which case Praxis will bear the cost of the audit. If, based on the results of such audit, additional payments are owed by Praxis under this Agreement, Praxis will make such additional payments, with interest as set forth in Section 9.12, within [***] after the date on which such accounting firm's written report is delivered to Praxis. If, based on the results of such audit, amounts were overpaid by Praxis to Ionis, [***]. Either Party may in good faith dispute the results of such audit, in which case the applicable payment [***] will not be due until such dispute is resolved. Ionis will treat the financial information subject to review under this Section 9.9 in accordance with the confidentiality provisions of ARTICLE 14.

9.10 Taxes.

9.10.1 Taxes on Income. Each Party will be solely responsible for the payment of all taxes imposed on its share of income arising directly or indirectly from the activities of the Parties under this Agreement.

9.10.2 Withholding Tax. The Parties agree to cooperate with one another and use reasonable efforts to lawfully avoid or reduce tax withholding or similar obligations in respect of royalties, milestone payments, and other payments made by Praxis to Ionis under this Agreement. To the extent Praxis is required to deduct and withhold taxes, interest or penalties on any payment, Praxis will pay the amounts thereof to the proper governmental authority for the account of Ionis and remit the net amount (i.e., the payment net of such taxes, interest and/or penalties) to Ionis in a timely manner. Praxis will promptly furnish Ionis with proof of payment of such taxes. If documentation is necessary to secure an exemption from, or a reduction in, any withholding taxes, the Parties will provide such documentation to the extent they are entitled to do so.

9.10.3 Tax Cooperation. Ionis will provide Praxis with any and all tax forms that may be reasonably necessary in order for Praxis to lawfully not withhold tax or to withhold tax at a reduced rate under an applicable bilateral income tax treaty. Following Praxis' timely receipt of such tax forms from Ionis, Praxis will not withhold tax or will withhold tax at a reduced rate under an applicable bilateral income tax treaty,

if appropriate under the applicable laws. Ionis will provide any such tax forms to Praxis upon request and in advance of the due date. Each Party will provide the other with reasonable assistance to determine if any taxes are applicable to payments under this Agreement and to enable the recovery, as permitted by Applicable Law, of withholding taxes resulting from payments made under this Agreement, such recovery to be for the benefit of the Party who would have been entitled to receive the money but for the application of withholding tax under this Section 9.10.

9.10.4 The provisions of this Section 9.10 are to be read in conjunction with the provisions of Section 17.1 below.

9.11 **Blocked Currency**. In each country where the local currency is blocked and cannot be removed from the country, royalties accrued in that country will be paid to Ionis in the country in local currency by deposit in a local bank designated by Ionis, unless the Parties otherwise agree or are prevented from doing so by Applicable Law.

9.12 **Interest**. If Praxis fails to make any payment due to Ionis under this Agreement, by the deadline specified in this ARTICLE 9, interest will accrue daily at an annual rate equal to [***].

9.13 **Initial Cost Reimbursement**. As of the Effective Date, Ionis has incurred approximately [***] in out-of-pocket costs for the performance of activities under the Research Plan and expects to incur an additional [***] in such costs. Upon execution of this Agreement by the Parties and Praxis' receipt of an invoice from Ionis for such costs, Praxis will pay such amount to Ionis as reimbursement for such costs.

ARTICLE 10.
INTELLECTUAL PROPERTY

10.1 **Collaboration IP**. Each Party will promptly disclose to the other Party in writing, any discovery, invention or creation made in the performance of activities under the Agreement ("***Collaboration Know-How***"). Inventorship of any Patent Rights that claim or cover Collaboration Know-How ("***Collaboration Patents***") and together with the Collaboration Know-How, the ("***Collaboration IP***")will be determined in accordance with United States patent laws and ownership will follow inventorship. Subject to any rights or licenses expressly granted under this Agreement, neither Party will have any obligation to account to the other for profits with respect to, or to obtain any consent of the other Party to license or exploit its rights in Collaboration IP, and each Party hereby waives any right it may have under the laws of any jurisdiction to require such consent or accounting.

10.2 **Prosecution of Patents**.

10.2.1 **Prior to License Fee Payment**.

(a) **Patents Owned or Controlled by a Party**. Prior to exercise of the Option by Praxis, each Party will have the right, at its cost and expense and at its discretion, to obtain, prosecute, maintain, and enforce throughout the world any Patent Rights owned or Controlled by such Party, including with respect to Ionis, the Ionis Core Technology Patents.

(b) **Jointly Owned Collaboration Patents**. Prior to exercise of the Option by Praxis, the Parties will determine which Party will be responsible for the prosecution and maintenance of each jointly owned Collaboration Patent (such Party, the "***Prosecuting Party***"). The Prosecuting Party will control and be responsible for all aspects of the prosecution and maintenance of such jointly owned Collaboration Patents. The Prosecuting Party will consider in good faith any comments or instructions the other Party timely provides the Prosecuting Party related to the prosecution and maintenance of such jointly owned Collaboration Patents. Unless the Parties otherwise agree, Ionis and Praxis will share equally the costs associated with the prosecution and maintenance of the jointly owned Collaboration Patents.

10.2.2 **After License Fee Payment**. Upon exercise of the Option by Praxis, and subject to Section 10.2.4, Praxis, either directly or through its Affiliates and Sublicensees, will have the right, as between the Parties, to obtain, prosecute, and maintain throughout the world all Ionis Product-Specific Patents and jointly owned Collaboration Patents, at Praxis' expense. Praxis, or its outside counsel, will provide Ionis with an update of the filing, prosecution and maintenance status for each such Ionis Product-Specific Patent on a periodic basis and will reasonably consult with and cooperate with Ionis on the preparation, filing, prosecution and maintenance of such Ionis Product-Specific Patents, including providing Ionis with drafts of material filings in sufficient time to allow Ionis to review and comment before such filings are due. Praxis, or its outside counsel, will provide to Ionis copies of any material papers relating to the filing, prosecution and maintenance of such Ionis Product-Specific Patents promptly upon their being filed or received. Praxis may cease prosecuting or maintaining particular applications or patents within such Ionis Product-Specific Patents in selected jurisdictions, if Praxis determines that it is not commercially reasonable to continue such efforts (in which case the terms of Section 10.2.4 will apply). As soon as practicable following Praxis' exercise of the Option, Ionis will deliver the applicable subject patent files with respect to any Ionis Product-Specific Patents to Praxis and will execute such documents and perform such acts as may be reasonably necessary for Praxis to take control of such patent prosecution and maintenance.

10.2.3 **Notice of Disputes**. Each Party will notify the other Party within a reasonable period of time if any action, suit, claim, dispute or proceeding concerning the Ionis Product-Specific Patents licensed hereunder or a Product has been initiated, which, if determined adversely to a Party, would have a material adverse effect on the licenses granted by Ionis to Praxis under this Agreement, or that would have a material adverse effect on or would materially impair either Party's rights under this Agreement. Any information communicated pursuant to this Section 10.2.3 will be treated as Confidential Information subject to the terms of ARTICLE 14.

10.2.4 **Discontinued Patents**. If, under Section 10.2.2, Praxis, its Affiliates and Sublicensees elect not to pursue or continue the filing, prosecution or maintenance of any particular applications or patents, or subject matter included in the Ionis Product-Specific Patents, in any jurisdiction, Praxis will give as much advance written notice as reasonably practicable (but in no event less than [***] or, in the case of an applicable impending deadline, [***]) to Ionis of any decision not to pursue or continue the preparation, filing, prosecution and maintenance of such Ionis Product-Specific Patent or subject matter included in such Ionis Product-Specific Patent (a "***Discontinued Patent***"). In such case, Ionis may elect to continue preparation, filing, prosecution, or maintenance of the Discontinued Patent in the select jurisdiction at its expense. In the event of such a Discontinued Patent in a Major Market, (a) Praxis' exclusive license under Section 7.1.1 with respect to such Discontinued Patent in such jurisdiction will automatically convert into a non-exclusive license, and (b) Ionis and its Affiliates will be relieved of the exclusivity covenants under Section 6.1.2 with respect to such Discontinued Patent in such jurisdiction, with the financial terms set forth in ARTICLE 9 remaining intact and unaffected. Praxis will execute such documents and perform such acts as may be reasonably necessary for Ionis to continue prosecution or maintenance of the applicable Discontinued Patent.

10.2.5 **Cooperation**. Each Party will cooperate reasonably in the preparation, filing, prosecution, maintenance, and defense of the Ionis Product-Specific Patents at Praxis' expense. Such cooperation includes (a) promptly executing all papers and instruments and requiring employees to execute such papers and instruments as reasonable and appropriate to enable such other Party, to file, prosecute and maintain such Ionis Product-Specific Patents in any country; and (b) promptly informing such other Party of matters that may affect the preparation, filing, prosecution or maintenance of any such Ionis Product-Specific Patents.

10.2.6 For purpose of this Agreement, "***prosecution and maintenance***" means the filing, preparation, prosecution (including conducting all correspondence and interactions with any patent office and seeking, conducting and defending all any interferences, *inter partes* reviews, reissue proceedings, reexaminations, and oppositions and similar proceedings), and maintenance thereof, including obtaining patent term extensions, regulatory exclusivity, supplemental protection certificates, or their equivalents with respect thereto. When used as a verb, "***prosecute and maintain***" means to engage in prosecution and maintenance.

10.3 **Enforcement of Patents.**

10.3.1 **Rights and Procedures**. If Ionis or Praxis determines that any Patent licensed hereunder is being infringed by a Third Party's activities and that such infringement could affect the exercise by the Parties of their respective rights and obligations or reduce the benefits anticipated by the Parties under this Agreement, it will promptly notify the other Party in writing. Except for the Ionis Product-Specific Patents, which are discussed below, the Party Controlling the Patent(s) that are allegedly being infringed will have the sole right, but not the obligation, to remove such infringement.

10.3.2 **Ionis Product-Specific Patents**. After Praxis' exercise of its Option, with respect to the Ionis Product-Specific Patents, Praxis will have the first right, but not the obligation, at Praxis' expense, to remove or abate such infringement. If Ionis requests that Praxis act to remove or abate infringement of an Ionis Product-Specific Patent, and Praxis believes it is not commercially appropriate to take such actions, the Parties will meet and discuss in good faith such circumstances and seek to reach agreement on what appropriate steps to take to cause such infringement to end in a commercially appropriate manner. If Praxis fails to take steps to initiate the process to remove or abate any such infringement within [***] following a written request from Ionis to act to remove or abate such infringement, or earlier notifies Ionis in writing of its intent not to take such steps, Ionis will have the right to do so at its expense and Praxis will have the right, at its own expense, to be represented in any such action.

10.3.3 **Cooperation**. The Party not enforcing the applicable Patent will provide reasonable assistance to the other Party (at such other Party's expense), including providing access to relevant documents and other evidence, making its employees available at reasonable business hours, and joining the action as a named party to the extent necessary to allow the enforcing Party to bring or maintain the action or establish damages. If any Third Party asserts in writing or in any legal proceeding that any of the Ionis Patent Rights are unenforceable based on any term or condition of this Agreement, the Parties will amend this Agreement as may reasonably be required to effect the original intent of the Parties, including preserving the enforceability of such Ionis Patent Rights.

10.3.4 **Recovery**. Any damages or other monetary awards recovered with respect to any action contemplated by this Section 10.3 will be shared as follows:

(a) the amount of such recovery will first be applied to the Parties' reasonable out-of-pocket costs incurred in connection with such proceeding (which amounts will be allocated pro rata if insufficient to cover the totality of such expenses); then

(b) any remaining proceeds will be (i) [***], or (ii) [***].

ARTICLE 11.
REPRESENTATIONS, WARRANTIES AND COVENANTS

11.1 **Representations, Warranties and Covenants of Both Parties**. Each Party hereby represents, warrants and, where specified, covenants as of the Effective Date to the other Party that:

11.1.1 it has the power and authority and the legal right to enter into this Agreement and perform its obligations hereunder, and that it has taken all necessary action on its part required to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

11.1.2 this Agreement has been duly executed and delivered on behalf of such Party and constitutes a legal, valid and binding obligation of such Party and is enforceable against it in accordance with its terms subject to the effects of bankruptcy, insolvency or other laws of general application affecting the enforcement of credit or rights and judicial principles affecting the availability of specific performance and general principles of equity, whether enforceability is considered a proceeding at law or equity;

11.1.3 all necessary consents, approvals and authorizations of all Regulatory Authorities and other parties required to be obtained by such Party in connection with the execution and delivery of this Agreement and the performance of its obligations hereunder have been obtained; and

11.1.4 the execution and delivery of this Agreement and the performance of such Party's obligations hereunder (a) do not conflict with or violate any requirement of Applicable Law or any provision of the certificate of incorporation, bylaws or any similar instrument of such Party, as applicable, in any material way, and (b) do not conflict with, violate, or breach or constitute a default or require any consent not already obtained under, any contractual obligation or court or administrative order by which such Party is bound.

11.2 Ionis Representations, Warranties and Covenants. Ionis hereby represents, warrants and covenants to Praxis that:

11.2.1 As of the Effective Date, APPENDICES 4, 5 and 6 contain a complete and accurate list of all Patents Controlled by Ionis that are necessary to Develop, Manufacture, Commercialize and otherwise exploit Products in the Field;

11.2.2 As of the Effective Date, all issued Patents within the Ionis Patent Rights are in full force and effect, have been filed, prosecuted and maintained in good faith, and, to the best of Ionis' knowledge, are valid and enforceable;

11.2.3 As of the Effective Date, Ionis has sufficient legal and/or beneficial title and ownership or right to license (or sublicense as the case may be) with respect to the Licensed IP as is necessary to fulfill its obligations under this Agreement and to grant the rights and licenses (or sublicenses as the case may be) granted to Praxis pursuant to this Agreement;

11.2.4 to the best of Ionis' knowledge as of the Effective Date, no actions, suits, claims, disputes or proceedings concerning the Ionis Patent Rights are currently pending or are threatened in writing, that if determined adversely to Ionis would have an adverse effect on Ionis' ability to grant the licenses to Praxis under this Agreement, or that would have an adverse effect on or would impair Praxis' right to practice the rights and licenses granted under this Agreement by Ionis to Praxis;

11.2.5 Ionis has, or will subcontract for, the requisite personnel, facilities, equipment, expertise, experience and skill to perform its obligations under this Agreement;

11.2.6 Ionis will at all times comply with all Applicable Laws in the performance of its rights and obligations under this Agreement;

11.2.7 As of the Effective Date, to its knowledge, Ionis has not entered into any agreement, including any In-License Agreement, under which Ionis has obtained a license or sublicense of rights from a Third Party to any intellectual property that would be necessary to Develop or Commercialize the Product as currently contemplated under the Development Candidate Identification Plan;

11.2.8 If Ionis enters into any agreement after the Effective Date under which Ionis obtains a license or sublicense of rights from a Third Party to any Licensed IP, then Ionis will (a) comply with all terms and conditions of such Additional Ionis In-License Agreements relating to Ionis' rights to Licensed IP, (b) not terminate any of Ionis' licenses or rights to Licensed IP under such Additional Ionis In-License Agreements; (c) not amend any Additional Ionis In-License Agreements in any way that would limit, modify or restrict Praxis' rights and licenses hereunder or increase or modify Praxis' obligations hereunder, or (d) not waive any rights under any Additional Ionis In-License Agreements in a manner that would adversely affect the rights and licenses granted to or obligations undertaken by Praxis hereunder, except in each case (a)-(d) with Praxis' prior written consent;

11.2.9 As of the Effective Date, Ionis has not granted, and during the Agreement Term will not grant, any right or license to any Third Party under the Licensed IP or relating to Products that would conflict with or limit the scope of any of the rights or licenses granted under this Agreement by Ionis to Praxis; and

11.2.10 Ionis will promptly notify Praxis in writing if any additional Ionis Patent Right becomes known to Ionis that is not listed on APPENDICES 4, 5 or 6.

11.3 **Praxis Representations, Warranties and Covenants**. Praxis hereby represents, warrants and covenants to Ionis that:

11.3.1 Praxis has sufficient legal and/or beneficial title and ownership or right to license (or sublicense as the case may be) to grant the licenses (or sublicenses as the case may be) granted to Ionis pursuant to this Agreement;

11.3.2 as of the Effective Date, there are no Praxis Background Patents that are necessary for either Party to fulfill its obligations under this Agreement;

11.3.3 to the best of Praxis' knowledge as of the Effective Date, no actions, suits, claims, disputes or proceedings concerning the Praxis Background Patents are currently pending or are threatened in writing, that if determined adversely to Praxis would have an adverse effect on Praxis' ability to Develop and Commercialize Products in accordance with this Agreement;

11.3.4 Praxis will not practice the Licensed IP outside the scope of the licenses granted to it pursuant to Section 7.1 and Section 7.3.

11.3.5 Praxis has, or will subcontract for, the requisite personnel, facilities, equipment, expertise, experience and skill to perform its obligations under this Agreement;

11.3.6 Praxis and its Affiliates and Sublicensees will at all times comply with all Applicable Laws in the performance of its rights and obligations under this Agreement;

11.3.7 Praxis' [***] financial statements are fair and accurate;

11.3.8 since [***], there has not been any material adverse change in the business, management, financial condition or results of operations of Praxis taken as a whole;

11.3.9 Praxis has or will obtain, and will allocate, sufficient financial resources to support and conduct its activities and fulfill its obligations under this Agreement;

11.3.10 Praxis and RogCon have entered into the RogCon In-License Agreement as of the Effective Date, Praxis has provided a copy of the RogCon In-License Agreement to Ionis and, as of the Effective Date, Praxis and RogCon have executed such agreement without making any material change thereto; and

11.3.11 Praxis will (a) comply with all terms and conditions of the RogCon In-License Agreement, (b) not terminate any of Praxis' licenses or rights to intellectual property under the RogCon In-License Agreement; (c) not amend the RogCon In-License Agreement in any way that would limit, modify or restrict Ionis' rights and licenses hereunder or increase or modify Ionis' obligations hereunder, or (d) not waive any rights under the RogCon In-License Agreement in a manner that would adversely affect the rights and licenses granted to or obligations undertaken by Praxis hereunder, except in each case (a)-(d) with Ionis' prior written consent.

11.4 DISCLAIMER OF WARRANTY. EXCEPT FOR THE EXPRESS WARRANTIES SET FORTH IN THIS ARTICLE 11, PRAXIS AND IONIS MAKE NO REPRESENTATIONS AND GRANT NO WARRANTIES, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE, AND PRAXIS AND IONIS EACH SPECIFICALLY DISCLAIM ANY WARRANTIES, WHETHER WRITTEN OR ORAL, OR EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF QUALITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE OR ANY WARRANTY AS TO THE VALIDITY OF ANY PATENT RIGHTS OR THE NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES.

ARTICLE 12.
INDEMNIFICATION; INSURANCE

12.1 **Indemnification by Praxis**. Praxis will indemnify, defend and hold harmless Ionis and its Affiliates, and its or their respective directors, officers, employees and agents (each, an

"***Ionis Indemnitee***"), from and against any and all liabilities, damages, losses, costs and expenses, including the reasonable fees of attorneys and other professionals (collectively, "**Losses**") arising out of or resulting from any and all Third Party suits, claims, actions, proceedings or demands ("**Claims**") based on:

12.1.1 the negligence, recklessness or willful misconduct of Praxis, its Affiliates and/or Sublicensees and its or their respective directors, officers, employees and agents, in connection with Praxis' performance of its obligations or exercise of its rights under this Agreement;

12.1.2 any breach of any representation or warranty or express covenant made by Praxis in this Agreement; or

12.1.3 the Development, Commercialization or manufacture of a Product by and/or on behalf of Praxis or its Affiliates or Sublicensees, including handling and storage by and/or on behalf of Praxis or its Affiliates or Sublicensees; except, in each case above, to the extent such Losses arose out of or resulted from (a) the gross negligence, recklessness or willful misconduct of any Ionis Indemnitee, (b) any breach by Ionis of any of its representations, warranties or covenants in this Agreement, or (c) any breach of Applicable Law by any Ionis Indemnitee.

12.2 **Indemnification by Ionis**. Ionis will indemnify, defend and hold harmless Praxis and its Affiliates, and its or their respective directors, officers, employees and agents (each, a "***Praxis Indemnitee***"), from and against any and all Losses arising out of or resulting from any and all Claims based on:

12.2.1 the negligence, recklessness or willful misconduct of Ionis and/or its Affiliates and its or their respective directors, officers, employees and agents, in connection with Ionis' performance of its obligations or exercise of its rights under this Agreement;

12.2.2 any breach of any representation or warranty or express covenant made by Ionis in this Agreement; or

12.2.3 the Research of Products by and/or on behalf of Ionis; except, in each case above, to the extent such Losses arose out of or resulted from (a) the gross negligence or willful misconduct of any Praxis Indemnitee, (b) any breach by Praxis of any of its representations, warranties or covenants in this Agreement, or (c) any breach of Applicable Law by any Praxis Indemnitee.

12.3 **Procedure**. If an Ionis Indemnitee or Praxis Indemnitee seeks indemnification, such Ionis Indemnitee or Praxis Indemnitee will inform the indemnifying Party, in writing, of a Claim as soon as reasonably practicable after such Ionis Indemnitee or Praxis Indemnitee receives notice of such Claim (it being understood and agreed, however, that any failure by an Ionis Indemnitee or Praxis Indemnitee to give such a timely notice will not relieve the indemnifying Party of its indemnification obligations under this Agreement, except to the extent that the indemnifying Party is actually prejudiced as a result of such failure to timely give notice) and permit the indemnifying Party to assume direction and control of the defense of the Claim (including the sole right to settle it at the sole discretion of the

indemnifying Party, *provided* that such settlement or compromise does not admit any fault or negligence on the part of the Ionis Indemnitee or Praxis Indemnitee, as applicable, or impose any obligation on, or otherwise materially adversely affect, the Ionis Indemnitee or Praxis Indemnitee). Notwithstanding the forgoing, the Ionis Indemnitees or Praxis Indemnitees, as applicable, will have the right to participate in such action or proceeding and to retain its own counsel but the indemnifying Party will not be liable for any legal expenses of other counsel subsequently incurred by such Ionis Indemnitee or Praxis Indemnitee in connection with the defense thereof unless (a) the indemnifying Party has agreed to pay such fees and expenses, (b) the indemnifying Party will have failed to employ counsel reasonably satisfactory to the Ionis Indemnitee or Praxis Indemnitee, as applicable, in a timely manner, or (c) the Ionis Indemnitee or Praxis Indemnitee will have been advised by counsel that there are actual or potential conflicting interests between the indemnifying Party and the Ionis Indemnitee or Praxis Indemnitee, including situations in which there are one or more legal defenses available to the Ionis Indemnitee or Praxis Indemnitee that are different from or additional to those available to the indemnifying Party.

12.4 **Insurance**. Praxis will maintain at its sole cost and expense, a liability insurance program (including clinical trials and product liability insurance) to protect against potential liabilities and risk arising out of activities to be performed under this Agreement and any agreement related hereto. At a minimum, Praxis will maintain, in force from [***] prior to enrollment of the first patient in a Clinical Trial involving a Product until at least one year after the completion of all applicable Clinical Trials, at its sole cost, a [***] insurance policy providing coverage of at least [***] per claim and annual aggregate. Further, at least [***] before Praxis initiates the First Commercial Sale of any Product hereunder, Praxis will procure and maintain until at least one year after Praxis' cessation of Commercialization a [***] insurance policy providing coverage of the greater of (a) [***] per claim and annual aggregate or (b) [***]. As applicable, Praxis will name Ionis as an additional insured and will upon request provide Ionis with a certificate of insurance. Praxis will promptly notify Ionis of any material change in insurance coverage or lapse in coverage.

12.5 TO THE MAXIMUM EXTENT PERMITTED UNDER APPLICABLE LAW, EXCEPT FOR BREACHES OF SECTION 6.1 (EXCLUSIVITY COVENANTS), SECTION 11.3.4, ARTICLE 15 (CONFIDENTIALITY) AND EACH PARTY'S INDEMNIFICATION OBLIGATIONS UNDER THIS ARTICLE 12, NEITHER IONIS NOR PRAXIS WILL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE OR INDIRECT DAMAGES ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT OR THE ACTIVITIES TO BE CONDUCTED PURSUANT TO THIS AGREEMENT, EVEN IF IT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE FOREGOING LIMITATION IN THIS SECTION 12.5 DOES NOT PRECLUDE IONIS FROM RECOVERING A REASONABLE ROYALTY IN A BREACH OF CONTRACT ACTION, INCLUDING BUT NOT LIMITED TO A BREACH OF SECTION 13.2.3.

ARTICLE 13.
TERM; TERMINATION

13.1 **Agreement Term; Expiration**. This Agreement is effective as of the Effective Date and, unless earlier terminated pursuant to the other provisions of this ARTICLE 13 will continue in full force and effect until the expiration of all payment obligations to Ionis (the "***Agreement Term***").

13.2 **Termination of the Agreement**.

13.2.1 **Termination for Certain Material Breaches**.

(a) If either Party believes that the other is in material breach of this Agreement (other than with respect to (i) a breach of Praxis' obligations under Section 8.3.1 where the applicable Performance Milestone has not been modified under Section 8.3.2 or Section 8.3.3, or (ii) a failure by Praxis to achieve a modified Performance Milestone (as modified by the Parties' agreement under Section 8.3.2 or by expert resolution under Section 8.3.3), in each case which is governed by Section 13.2.2), then the non-breaching Party may deliver notice of such breach to the other Party. To the extent the breach is capable of being cured, the allegedly breaching Party will have [***] to cure such breach (except to the extent such breach involves the failure to make a payment when due, which breach must be cured within [***] following such notice); *provided that*, in the case of a breach other than a breach involving the failure to make a payment when due, if the breaching Party uses Commercially Reasonable Efforts to cure such breach within the applicable [***] cure period but requires additional time to cure such breach, such [***] cure period will be extended until the earlier of [***] following the notice of breach or such time as the breaching Party is no longer using Commercially Reasonable Efforts to cure such breach. If the Party receiving notice of breach fails to cure such breach within the [***] or [***] period, as applicable, the non-breaching Party may (x) declare a breach hereunder and terminate this Agreement upon written notice, or (y) elect to not terminate this Agreement, and in such event the non-breaching Party will retain its right to continue this Agreement while simultaneously pursuing remedies permitted at law or in equity (including contract damage remedies), subject to the terms, conditions and limits imposed by this Agreement.

(b) Notwithstanding the foregoing or anything to the contrary herein, if the Parties reasonably and in good faith disagree as to whether there has been a material breach of this Agreement, (i) the dispute will be resolved in accordance with the process set forth in Section 17.4.2; (ii) the relevant cure period with respect thereto will be tolled from the date the breaching Party notifies the non-breaching Party of such dispute and through the resolution of such dispute in accordance with the applicable provisions of this Agreement; (iii) during the pendency of such dispute, all of the terms and

conditions of this Agreement will remain in effect and the Parties will continue to perform all of their respective obligations hereunder; and (iv) if it is ultimately determined that the breaching Party committed such material breach, then the breaching Party will have [***] to cure such material breach from the date of such determination, failing which the non-breaching Party may elect to terminate the Agreement immediately upon the issuance of written notice to the breaching Party. If Ionis is the non-breaching Party, Ionis will have the reversion right pursuant to ARTICLE 14.

13.2.2 **Termination by Ionis for Praxis' Failure to Meet Performance Milestones**. If Praxis is in breach of Praxis' obligations under Section 8.3.1 where the applicable Performance Milestone has not been modified under Section 8.3.2 or Section 8.3.3, or if Praxis fails to meet a Performance Milestone as modified by the Parties pursuant to Section 8.3.2 or by expert resolution under Section 8.3.3, Ionis will provide Praxis with [***] prior written notice of Ionis' intent to terminate, stating the reasons and justification for such termination. If Praxis, or its Affiliate or Sublicensee, has not cured such breach, if such breach is capable of curing, during the [***] period, as such period may be extended by agreement of the Parties, following Ionis' issuance of such notice, or if such breach is not capable of curing, then Ionis may terminate the Agreement immediately upon written notice to Praxis, and Ionis will have the reversion right pursuant to ARTICLE 14.

13.2.3 **Termination by Praxis**. This Agreement may be terminated by Praxis, without cause, upon [***] written notice to Ionis. For the avoidance of doubt, upon any such termination under this Section 13.2.3, Praxis and its Affiliates and Sublicensees will, subject to the wind-down period set forth in ARTICLE 14, stop selling all Products, and all Products will revert back to Ionis in accordance with ARTICLE 14.

13.2.4 **Termination for Insolvency**. Either Party may terminate this Agreement if, at any time, the other Party files in any court or agency pursuant to any statute or regulation of any state or country a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of the Party or of substantially all of its assets; or if the other Party proposes a written agreement of composition or extension of substantially all of its debts; or if the other Party is served with an involuntary petition against it, filed in any insolvency proceeding, and such petition is not dismissed within [***] after the filing thereof; or if the other Party proposes to be or is a party to any dissolution or liquidation; or if the other Party makes an assignment of substantially all of its assets for the benefit of creditors. Notwithstanding any further rights under Applicable Law, upon written request of the other Party, the Party filing for bankruptcy, insolvency or a similar proceeding as set forth in this Section 13.2.4 will promptly provide to such other Party all information and documents necessary to prosecute, maintain and enjoy its rights under the terms of this Agreement.

13.2.5 **Termination for Failure to Identify a Development Candidate**. If, despite using Commercially Reasonable Efforts, Ionis is unable to identify a Development

Candidate prior to the end of the Collaboration Term, either Party may terminate this Agreement by providing the other Party with [***] written notice of termination. Upon termination under this Section 13.2.5:

(a) Praxis will have no further rights or licenses in the Licensed IP (other than its rights to the jointly owned Collaboration IP set forth in Section 13.2.5(c));

(b) Ionis will have no further rights or licenses in or to any intellectual property or intellectual property rights Controlled by Praxis or any of its Affiliates except as Ionis may have obtained by separate agreement (other than its rights to the jointly owned Collaboration IP set forth in Section 13.2.5(c)); and

(c) Praxis and Ionis will be entitled to exercise any rights in jointly owned Collaboration IP available under Applicable Law including, without limitation, the right to use and exploit such jointly owned Collaboration IP for any purpose and to license, sell, assign or otherwise transfer its interest in such jointly owned Collaboration IP to any Third Party without notice or compensation to the other Party.

13.3 Consequences of Termination of this Agreement.

13.3.1 Return of Information and Materials. Upon termination of this Agreement by either Party pursuant to this ARTICLE 13, each Party will return to the other Party (or destroy, as directed by the other Party) all data, files, records and other materials containing or comprising such Party's Confidential Information. Notwithstanding the foregoing, each Party will be permitted to retain one copy of such data, files, records, and other materials for archival purposes and for regulatory compliance.

13.3.2 Sublicense Survival. If this Agreement terminates for any reason, then, at Praxis' request, any Sublicense will survive and the Sublicensee will, from the effective date of such termination, become a direct licensee of Ionis with respect to the rights sublicensed to the Sublicensee by Praxis; so long as (a) Praxis has provided Ionis a complete copy of the applicable Sublicense and paid Ionis any Sublicense Revenue associated therewith, (b) such Sublicensee is not in breach of its Sublicense, (c) such Sublicensee continues to comply with all of the terms of the Sublicense, including the obligations of this Agreement imposed on Sublicensee by the Sublicense, and (d) such Sublicensee agrees to continue to pay directly to Ionis the portion of such Sublicensee's payments under the Sublicense due to Ionis under this Agreement. Praxis agrees that it will confirm clause (a) of the foregoing in writing at the request and for the benefit of Ionis and if requested, the Sublicensee.

13.4 Accrued Rights; Surviving Obligations.

13.4.1 Accrued Rights. Termination or expiration of this Agreement for any reason will be without prejudice to any rights or financial compensation that will have accrued to the benefit of a Party prior to such termination or expiration. Such termination or expiration will not relieve a Party from obligations that are expressly indicated to survive the termination or expiration of this Agreement.

13.4.2 **Survival**. APPENDIX 1 (to the extent definitions are embodied in the following listed Articles and Sections); Section 5.3.2, Section 5.3.3, Section 7.3.2 (Enabling License to Ionis), Section 9.1.3(b), Section 9.4.3 (Priority Review Vouchers), Section 9.2.5 (Royalty Payments), Section 9.4.2 (Sublicense Revenue Payments), Section 9.6 (Payment Reports), Section 9.7 (Mode of Payment), Section 9.8 (Records Retention), Section 9.9 (Audits of Payment Reports), Section 9.10 (Taxes), Section 9.12 (Interest), Section 11.4 (Disclaimer of Warranty), ARTICLE 12 (INDEMNIFICATION; INSURANCE), ARTICLE 13 (TERM; TERMINATION), ARTICLE 14 (IONIS REVERSION RIGHT), ARTICLE 15 (CONFIDENTIALITY), and ARTICLE 17 (MISCELLANEOUS) of this Agreement will survive expiration or termination of this Agreement for any reason.

13.4.3 **Rights in Bankruptcy**. All rights and licenses granted under this Agreement are, for purposes of Section 365(n) of the U.S. Bankruptcy Code (*i.e.*, Title 11 of the U.S. Code) or analogous provisions of Applicable Law outside the United States, licenses of rights to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code or analogous provisions of Applicable Law outside the United States. The Parties agree that each Party, as licensee of such rights under this Agreement, will retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code or any other provisions of Applicable Law outside the United States that provide similar protection for "intellectual property." The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against a Party under the U.S. Bankruptcy Code or analogous provisions of Applicable Law outside the United States, the Party that is not subject to such proceeding will be entitled to a complete duplicate of (or complete access to, as appropriate) such intellectual property and all embodiments of such intellectual property, which, if not already in the non-subject Party's possession, will be promptly delivered to it upon the non-subject Party's written request therefor. Any agreements supplemental hereto will be deemed to be "agreements supplementary to" this Agreement for purposes of Section 365(n) of the U.S. Bankruptcy Code.

ARTICLE 14.
IONIS REVERSION RIGHT

14.1 If the Agreement is (a) terminated by Ionis under Section 13.2.1 (Termination for Certain Material Breaches), Section 13.2.2 (Termination by Ionis for Praxis' Failure to Meet Performance Milestones), or Section 13.2.4 (Termination for Insolvency), or (b) terminated by Praxis under Section 13.2.3, this ARTICLE 14 will apply.

14.2 In such event, the Parties wish to provide a mechanism to ensure that patients who were being treated with the applicable Discontinued Product before such termination or expiration or who desire access to such Discontinued Product can continue to have access to such Discontinued Product until the regulatory and commercial responsibilities for the Discontinued Product are transitioned from Praxis to Ionis following termination or

expiration of the Agreement. As such, following the termination or expiration of this Agreement, Ionis may request Praxis perform transition services as listed in SCHEDULE 14.3 and such other transition services that the Parties mutually agree in writing to (a) provide patients with continued access to any Products that are the subject of such termination (collectively, "***Discontinued Products***"), (b) transition the responsibilities under all Approvals and ongoing Clinical Trials for the applicable Discontinued Products to Ionis or its designee and (c) transition the then-current supply process and responsibilities for the Discontinued Products to Ionis or its designee (collectively, the "***Transition Services***"). Subject to the Parties agreeing on a transition plan as described in Section 14.3, Praxis will perform such Transition Services using reasonable efforts.

14.3 Ionis may elect to have Praxis perform the Transition Services by providing written notice to Praxis no later than the later of [***] asking Ionis to confirm if Ionis wishes to have Praxis perform the Transition Services. If Ionis requests Transition Services, then Ionis will propose a transition plan setting forth the Transition Services to be performed by Praxis, including delivery and transition dates consistent with those set forth in SCHEDULE 14.3, and, for a period of [***] after such request, the Parties will use good faith efforts to negotiate a mutually agreeable version of such transition plan. In addition, the Parties will, within [***] after such request, establish a transition committee consisting of at least each Party's Alliance Managers, a representative from each Party's CMC group who was responsible for the Discontinued Product prior to the termination, and up to two additional representatives from each Party who are from other relevant functional groups to facilitate a smooth transition. While Praxis is providing Transition Services, Praxis and Ionis will mutually agree on talking points and a communication plan to customers, specialty pharmacies, physicians, Regulatory Authorities, patient advocacy groups and clinical study investigators, and Praxis will make all such communication to such entities in accordance with the mutually agreed talking points.

14.4 Ionis will pay Praxis for the Transition Services at [***] to perform the Transition Services, calculated [***]. In addition, Ionis will reimburse [***] to perform the Transition Services. In accordance with SCHEDULE 14.3, Praxis may continue to sell Discontinued Product, either directly or through its Affiliates or Sublicensees, until Praxis has completed performing the Transition Services, at which time all rights and licenses granted by Ionis to Praxis under this Agreement will be divested from Praxis and will revert back to Ionis. Praxis will [***] during the period that Praxis is performing the Transition Services, *provided that* Praxis complies with all of its obligations under this ARTICLE 14 during such period.

14.5 Praxis will assign or exclusively license to Ionis the rights granted to Praxis under the RogCon In-License Agreement if requested by Ionis and will assign to Ionis any trademarks Controlled by Praxis related to the Discontinued Products.

14.6 Praxis will and hereby does grant to Ionis a worldwide, sublicensable, non-exclusive license or sublicense, as the case may be, to all Patent Rights, data and know-how Controlled by Praxis as of the effective date of the termination necessary to Research, Develop, make, have made, use, sell, offer for sale, have sold, import and otherwise Commercialize Discontinued Products.

14.7 Praxis will assign, and hereby does assign, to Ionis, for Ionis' exclusive use with respect to the Development and Commercialization of the Discontinued Products, all of Praxis' right, title and interest in and to all data, results, regulatory information and files in the possession of Praxis that are necessary for Ionis to Research, Develop, make, have made, use, sell, offer for sale, have sold, import and otherwise Commercialize Discontinued Products and will take such further action as may be necessary to transfer (a) regulatory documents in Ionis' name and (b) control of regulatory proceedings to Ionis.

14.8 For the avoidance of doubt, Ionis' rights under this ARTICLE 14 are in addition to any other rights and remedies available to Ionis under this Agreement and Applicable Law.

ARTICLE 15.
CONFIDENTIALITY

15.1 **Disclosure and Use Restriction**. Each Party agrees that, for so long as this Agreement is in effect and for a period of [***] thereafter, a Party (the "***Receiving Party***") receiving Confidential Information of the other Party (the "***Disclosing Party***") will (a) maintain in confidence such Confidential Information, (b) not disclose such Confidential Information except to the Receiving Party's employees having a need-to-know such Confidential Information, (c) not disclose such Confidential Information to any Third Party without the prior written consent of the Disclosing Party (such consent not to be unreasonably withheld, conditioned or delayed), except for disclosures expressly permitted by this Agreement, and (d) not use such Confidential Information for any purpose except those expressly permitted by this Agreement.

15.2 **Authorized Disclosure**. To the extent that it is reasonably necessary or appropriate to fulfill its obligations or exercise its rights under this Agreement, a Party may disclose Confidential Information belonging to the other Party in the following instances:

15.2.1 filing, prosecuting and maintaining patent applications and patents in accordance with this Agreement;

15.2.2 communicating with Regulatory Authorities as necessary for the Development or Commercialization of a Product in a country, in accordance with this Agreement and as required in connection with any filing, application or request for Approval; *provided*, *however*, that reasonable measures will be taken to assure confidential treatment of such information;

15.2.3 prosecuting or defending litigation;

15.2.4 complying with Applicable Laws (including the rules and regulations of the Securities and Exchange Commission or any national securities exchange, and compliance with tax laws and regulations) and with judicial process, if (a) in the **reasonable opinion of the Receiving Party's counsel**, **such disclosure is necessary** for such compliance and (b) such disclosure is made in accordance with Section 15.3 or Section 15.4 as applicable;

15.2.5 disclosure, in connection with the performance of this Agreement and solely on a need-to-know basis, to Affiliates, potential or actual collaborators (including potential Sublicensees), potential or actual investment bankers, investors, lenders, or acquirers, or employees, independent contractors or agents, each of whom prior to disclosure must be bound by written obligations of confidentiality and non-use no less restrictive than the obligations set forth in this ARTICLE 14; *provided*, *however*, that the Receiving Party will remain responsible for any failure by any Person who receives Confidential Information pursuant to this ARTICLE 14 to treat such Confidential Information as required under this ARTICLE 14;

15.2.6 in the case of Praxis, its Affiliates and Sublicensees, use and disclosure of Ionis Know-How and Ionis Manufacturing and Analytical Know-How licensed to Praxis under this Agreement in the ordinary course of the exercise of the rights and licenses granted to Praxis hereunder; and

15.2.7 in the case of Praxis, disclosure to RogCon in connection with Praxis' performance of its obligations and exercise of its rights under this Agreement and/or in connection with Praxis' performance of its express obligations under the RogCon In-License Agreement.

If Confidential Information is disclosed in accordance with this Section 15.2, such disclosure will not cause any such information to cease to be Confidential Information except to the extent that such permitted disclosure results in a public disclosure of such information (other than by breach of this Agreement). Where reasonably possible and subject to Section 15.3 and Section 15.4, the Receiving Party will notify the Disclosing Party of the Receiving Party's intent to make such disclosure pursuant to the applicable subsection of this Section 15.2 before making such disclosure to allow the Disclosing Party adequate time to take whatever action it may deem appropriate to protect the confidentiality of the information.

15.3 **Required Disclosure**. A Receiving Party may disclose Confidential Information pursuant to interrogatories, requests for information or documents, subpoena, civil investigative demand issued by a court or governmental agency or as otherwise required by Applicable Law; *provided*, *however*, that, unless legally prohibited from doing so, the Receiving Party will notify the Disclosing Party promptly upon receipt thereof, giving (where practicable) the Disclosing Party sufficient advance notice to permit it to oppose, limit or seek confidential treatment for such disclosure, and to file for patent protection if relevant; and *provided*, *further*, that the Receiving Party will furnish only that portion of the Confidential Information which it is advised by counsel is legally required, whether or not a protective order or other similar order is obtained by the Disclosing Party.

15.4 **Securities Filings**. If either Party proposes to file with the Securities and Exchange Commission or the securities regulators of any state or other jurisdiction a registration statement, periodic report, or any other disclosure document which describes or refers to this Agreement under the Securities Act of 1933, as amended, the Securities Exchange Act, of 1934, as amended, or any other applicable securities law, the Party will notify the other Party of such intention and will provide such other Party with a copy of relevant portions

of the proposed filing not less than [***] prior to such filing, and will seek to obtain confidential treatment of any information concerning the Agreement that such other Party requests be kept confidential (except to the extent advised by counsel that confidential treatment is not available for such information), and will only disclose Confidential Information which it is advised by counsel is legally required to be disclosed. No such notice will be required under this Section 15.4 if the substance of the description of or reference to this Agreement contained in the proposed filing has been included in any previous filing made by either Party hereunder or otherwise approved by the other Party.

15.5 **Injunctive Relief.** The Parties understand and agree that remedies at law may be inadequate to protect against any breach of any of the provisions of this ARTICLE 15 by either Party. Accordingly, each Party is entitled to seek injunctive relief by a court of competent jurisdiction against any action that constitutes a breach of this ARTICLE 15.

ARTICLE 16.
PRESS RELEASES AND PUBLICATIONS

16.1 **Press Releases; Public Disclosure**. Each Party agrees not to issue any other press release or other public statement disclosing other information relating to this Agreement or the transactions contemplated hereby without the prior written consent of the other Party, which consent will not be unreasonably withheld, conditioned or delayed, *provided*, *however*, that each Party may make disclosures permitted by, and in accordance with, ARTICLE 15. Each Party agrees to provide to the other Party a copy of any public statement regarding this Agreement or the transactions contemplated hereby as soon as reasonably practicable prior to its scheduled release. Except under extraordinary circumstances, each Party will provide the other with an advance copy of any such statement at least [***] prior to its scheduled release. Each Party will have the right to expeditiously review and recommend changes to any such statement and, except as otherwise permitted by ARTICLE 15, the Party whose statement has been reviewed will remove any information the reviewing Party reasonably deems to be inappropriate for disclosure. The contents of any statement or similar publicity that has been reviewed and approved by the reviewing Party can be re-released by either Party without a requirement for re-approval.

16.2 Praxis will promptly notify (and provide as much advance notice as reasonably possible to) Ionis of any material event related to a Product, including but not limited to, the starting or stopping of a Clinical Trial, any Clinical Hold, the Clinical Trial data or results, material regulatory discussions, submission of any application for or receipt of Approval, or a material change in Praxis' sales projections for a Product (each, a "***Significant Event***") so that the Parties may analyze the need to or desirability of publicly disclosing or reporting such event. In all such cases, the Parties will agree on a communications strategy for such Significant Event and will make any such disclosure in accordance with Section 16.1. Notwithstanding Section 16.1 above, any press release or other similar public communication by Praxis related to a Product's (a) efficacy or safety data and/or results or (b) sales projections or results will be submitted to Ionis for review at least [***] in advance (if reasonably practicable under the circumstances and if not reasonably practicable, as far in advance as possible) of such proposed public disclosure, and Praxis will give good faith consideration to any comments provided by Ionis as a result of such review.

16.3 **Scientific or Clinical Presentations**. Regarding any proposed scientific or clinical publications or public presentations related to summaries of results from any of the activities under this Agreement generated by Ionis or Praxis, the Parties acknowledge that scientific lead time is a key element of the value under this Agreement and further agree to use Commercially Reasonable Efforts to control public scientific disclosures of the results of the activities under this Agreement to prevent any potential adverse effect of any premature public disclosure of such results. The Parties will agree to a publication plan whereby each Party will first submit to the other Party an advanced draft of all such publications or presentations, whether they are to be presented orally or in written form, at least [***] prior to submission for publication. Each Party will review such proposed publication to avoid the unauthorized disclosure of a Party's Confidential Information and to preserve the patentability of Collaboration Know-How arising under this Agreement. If, during such [***] period, the other Party informs such Party that its proposed publication contains Confidential Information of the other Party, then such Party will delete such Confidential Information from its proposed publication, other than results of the Collaboration. In addition, if at any time during such [***] period, the other Party informs such Party that its proposed publication discloses Collaboration Know-How made by either Party in the course of the research under this Agreement that has not yet been protected through the filing of a patent application, or the public disclosure of such proposed publication could be expected to have a material adverse effect on any Collaboration Know-How solely owned or Controlled by such other Party, then such Party will either (a) delay such proposed publication for up to [***] from the date the other Party informed such Party of its objection to the proposed publication, to permit the timely preparation and first filing of patent application(s) on the information involved or (b) remove the identified disclosures prior to publication. Notwithstanding the foregoing, if the Parties mutually agree that public disclosure of such proposed publication could reasonably be expected to have a material adverse effect on the ability to develop an ASO as a therapeutic candidate, the Parties will delay publication until a patent application covering such ASO is filed.

16.4 **Acknowledgement**.

16.4.1 Praxis will acknowledge in any press release, public presentation or publication regarding a Product Ionis' role in discovering and developing the Product, that the Product is under license from Ionis and otherwise acknowledge the contributions from Ionis, and Ionis' stock ticker symbol (IONS).

16.4.2 Praxis understands and acknowledges the importance to Ionis of continuing to be associated with the drugs it discovers. As such, Praxis agrees that it will acknowledge Ionis' role in the discovery of a Product in any scientific, medical and other Product-related communications to the extent such communications address the research, discovery or commercialization of a Product, by prominently including the words "***Discovered by Ionis***" or equivalent language (collectively, the "***Ionis Attribution Language***") in any such communications; *provided*, *however*, that Praxis will have no obligation to include the Ionis Attribution Language in any

of the following: (a) communications or materials where such inclusion would be prohibited by Applicable Law or (b) other materials where Praxis branding is not prominently featured; *provided that*, in each case, Praxis will use reasonable efforts to have the Ionis Attribution Language included in any such communication, consistent with the efforts that Praxis uses to have statements regarding its own contributions to the Product included in such communication.

16.4.3 Ionis may reference the Products (and identify Praxis as its partner for the Products) on its website, in its SEC filings, and in presentations and other publications regarding Ionis' drug pipeline.

ARTICLE 17.
MISCELLANEOUS

17.1 **Assignment and Successors**.

17.1.1 Neither this Agreement nor any obligation of a Party hereunder may be assigned by either Party without the consent of the other, which will not be unreasonably withheld, delayed or conditioned.

17.1.2 Notwithstanding Section 17.1.1:

(a) each Party may assign this Agreement and the rights, obligations and interests of such Party, in whole or in part, without the other Party's consent, to any of its Affiliates, to any purchaser of all or substantially all of its business or assets to which this Agreement relates or to any successor corporation resulting from any merger, consolidation, share exchange or other similar transaction; *provided*, if Praxis or any of its Affiliates or Sublicensees transfers or assigns this Agreement or a Sublicense to [***] described in this Agreement, then Praxis (or such Affiliate or Sublicensee), will [***], "gross up") [***]. [***]. To the extent Ionis [***] with respect to the [***].

(b) At any time prior to [***], if Praxis wishes to assign this Agreement in its entirety, including all of the rights, obligations and interests of Praxis hereunder, to RogCon, then Praxis will give Ionis at least [***] prior written notice of its intent to assign the Agreement to RogCon (the "***Assignment Notice***"), which notice will include the information necessary for Ionis to determine whether the Assignment Criteria are satisfied. If Ionis, acting in good faith, believes that RogCon is not reasonably capable of fulfilling all of Praxis' obligations under the Agreement, then Ionis must notify Praxis of its determination within [***] after its receipt of Praxis' notice of assignment, along with a reasonably detailed explanation of the factual basis for its determination. If Ionis fails to provide any notice of objection within such [***] period, then Ionis will be deemed to have waived its right to contest the assignment to RogCon under this Section 17.1.2(b). If Ionis provides Praxis with timely notice of its objection to the

assignment to RogCon, then the Parties will work together in good faith for a period of [***] to determine if there are any conditions under which Ionis would accept Praxis' proposed assignment of the agreement to RogCon. Any deadlines, including the Option Deadline, or time periods for performance which come due during such [***] period will be automatically extended until the last day of such [***] period. For purposes of this Section 17.1.2(b), "***Assignment Criteria***" *means* (i) as of the date of the notice of assignment, RogCon has, and as of the proposed effective date of the assignment will have, the greater of (A) [***] in working capital and (B) [***]; and (ii) as of the date of the notice of assignment, RogCon has, and as of the proposed effective date of the assignment will have, sufficient personnel to perform Praxis' remaining obligations under the Agreement. Praxis can only assign the Agreement to RogCon after (x) Praxis grants to RogCon a sublicensable, worldwide, royalty-free, fully paid up, nonexclusive license or sublicense, as the case may be, to (A) any Collaboration Patents Controlled by Praxis and (B) any Praxis Background Patents that Cover any invention or technology that the Parties agreed to incorporate into the Development Candidate, to develop, manufacture and otherwise commercialize the Development Candidate and any [***] in the Field and for the Treatment of [***], and (y) RogCon executes a direct sublicense to Ionis that is effective if RogCon does not exercise the Option prior to the Option Deadline (together, (x) and (y) the "***Assignment Conditions***")**.**

(c) Ionis may assign or transfer its rights to receive payments under this Agreement (but, subject to any right that Praxis may have under Applicable Law), without Praxis' consent, to an Affiliate or to a Third Party in connection with a payment factoring transaction.

17.1.3 Any purported assignment or transfer made in contravention of this Section 17.1 will be null and void.

17.2 **Severability**. If any provision of this Agreement is held to be illegal, invalid or unenforceable by a court of competent jurisdiction, such adjudication will not affect or impair, in whole or in part, the validity, enforceability or legality of any remaining portions of this Agreement. All remaining portions will remain in full force and effect as if the original Agreement had been executed without the invalidated, unenforceable or illegal part. The Parties agree to use good faith, reasonable efforts to replace the illegal, invalid or unenforceable provision with a legal, valid and enforceable provision that achieves similar economic and non-economic effects as the severed provision.

17.3 **Governing Law; Jurisdiction; Venue**.

17.3.1 This Agreement will be governed by and construed and enforced in accordance with the laws of the State of Delaware without reference to any rules of conflicts of laws.

17.3.2 Subject to Section 17.4, each Party hereby irrevocably and unconditionally submits, for itself and its property, to the exclusive jurisdiction of the United States District Court for the Southern District of California (or, if but only if such court lacks, or will not exercise, subject matter jurisdiction over the entirety of the dispute, the Superior Court of the State of California sitting in the County of San Diego).

17.3.3 Notwithstanding the foregoing or anything to the contrary herein, any dispute relating to the scope, validity, enforceability or infringement of any Patent Rights will be governed by and construed and enforced in accordance with the patent laws of the applicable jurisdiction.

17.4 Dispute Resolution.

17.4.1 Resolution by Senior Representatives. The Parties will seek to settle amicably any and all disputes, controversies or claims arising out of or in connection with this Agreement. Any such dispute between the Parties will, except to the extent expressly provided otherwise herein, be promptly presented to the Chief Executive Officer of Praxis and the Chief Operating Officer of Ionis or the functional successor in their respective organizations, or their respective designees (who must be at the Vice President level or higher within the organization) (the "***Senior Representatives***"), for resolution. Such Senior Representatives, will meet in person or by teleconference as soon as reasonably possible thereafter, and use their good faith efforts to agree on the resolution of the dispute, controversy or claim. A senior representative of RogCon will be invited to attend, at his or her own expense, any meetings of the Senior Representatives and will be allowed to participate in such meetings as an observer. If any such dispute cannot be resolved by the Senior Representatives within [***] of presentation to the Senior Representatives for resolution, then, except as stated otherwise in this Agreement, either Party may refer such dispute to binding arbitration to be conducted as set forth below in this Section 17.4. For clarification, any dispute relating to the validity or scope of any Patent will not be subject to arbitration.

17.4.2 Arbitration.

(a) Except to the extent that this Agreement identifies a Party who will have final decision-making authority over the matter or otherwise specifies a different mechanism for dispute resolution, if the Parties fail to resolve the dispute through their Senior Representatives, then a Party may submit such dispute to arbitration by notifying the other Party, in writing of such dispute. Within [***] after receipt of such notice the Parties will designate in writing a single arbitrator to resolve the dispute; *provided*, *however*, that if the Parties cannot agree on an arbitrator within such [***] period, the arbitrator will be selected by the Chicago, Illinois office of JAMS. The arbitrator will be a lawyer or retired judge knowledgeable and experienced in the Applicable Law concerning the subject matter of the dispute. In any case, the arbitrator will not be an Affiliate, employee, consultant, officer, director or stockholder of either Party, or otherwise have any current or previous

relationship with either Party or their respective Affiliates. The place of arbitration will be Chicago, Illinois. Either Party may apply to the arbitrator for the interim injunctive relief until the arbitration award is rendered or the controversy is otherwise resolved.

(b) Within [***] after the appointment of the arbitrator, the arbitrator and the Parties will meet, and each Party will provide to the arbitrator a written summary of all disputed issues, and such Party's position on such disputed issues.

(c) The arbitrator will set a date for a hearing, which will be no later than [***] after the submission of the Parties' summary of issues under Section 17.4.2(b), for the presentation of evidence and legal argument concerning each of the issues identified by the Parties. The Parties will have the right to be represented by counsel. Except as provided herein, the arbitration will be administered by JAMS in accordance with its Comprehensive Arbitration Rules and Procedures applicable at the time of the notice of arbitration pursuant to Section 17.4.2(a); *provided*, *however*, that the Federal Rules of Evidence will apply with regard to the admissibility of evidence in such hearing. In any such arbitration proceeding, the Parties will be entitled to all remedies to which they would be entitled in a United States District Court and to full discovery to the same degree permitted under the Federal Rules of Civil Procedure, including monetary damages, injunctive relief, termination of licenses or assignment of rights to a Product to either of the Parties.

(d) The arbitrator will use his or her best efforts to rule on each disputed issue within [***] after completion of the hearing described in Section 17.4.2(c). The determination of the arbitrator as to the resolution of any dispute will be binding and conclusive on all Parties. All rulings of the arbitrator will be in writing and will be delivered to the Parties as soon as is reasonably possible. Nothing contained herein will be construed to permit the arbitrator to award punitive, exemplary or any similar damages. The arbitrator's decision will include findings of fact and conclusions of law.

(e) Each Party will bear its own attorneys' fees, costs and disbursements arising out of the arbitration, and will pay an equal share of the fees and cost of the arbitrator; *provided*, *however*, the arbitrator will be authorized to determine whether a Party is the prevailing party, and if so, to award to that prevailing party reimbursement for any or all of its reasonable attorneys' fees, cost and disbursements (including, for example, expert witness fees and expenses, photocopy charges, travel expenses, etc.), and/or the fees and costs of the administrator and the arbitrator.

(f) Except to the extent necessary to confirm an award or as may be required by Applicable Law, neither Party nor an arbitrator may disclose the existence, content or results of an arbitration without the prior written

consent of both Parties. No arbitration may be initiated after the date when a legal or equitable claim would otherwise be barred by the applicable statute(s) of limitations.

17.5 **Injunctive Relief; Court Actions**. Notwithstanding anything to the contrary in this Agreement, each Party will be entitled to seek from any court of competent jurisdiction, in addition to any other remedy it may have at law or in equity, injunctive or other equitable relief in the event of an actual or threatened breach of this Agreement by the other Party, without the posting of any bond or other security, and such an action may be filed and maintained notwithstanding any ongoing discussions between the Parties or any ongoing arbitration proceeding. The Parties agree that in the event of a threatened or actual material breach of this Agreement, injunctive or equitable relief would be an appropriate remedy. In addition, either Party may bring an action in any court of competent jurisdiction to resolve disputes pertaining to the validity, construction, scope, enforceability, infringement or other violations of Patent Rights or other intellectual property rights, and no such claim will be subject to arbitration pursuant to Section 17.4.2.

17.6 **Force Majeure**. No Party will be held responsible to the other Party nor be deemed to be in default under, or in breach of any provision of, this Agreement for failure or delay in performing any obligation of this Agreement when such failure or delay is due to force majeure, and without the fault or negligence of the Party so failing or delaying. For purposes of this Agreement, force majeure means a cause beyond the reasonable control of a Party, which may include acts of God, war, terrorism, civil commotion, fire, flood, earthquake, tornado, tsunami, explosion, storm, pandemic, epidemic or failure of public utilities or common carriers. In such event the Party so failing or delaying will immediately notify the other Party of such inability and of the period for which such inability is expected to continue. The Party giving such notice will be excused from such of its obligations under this Agreement as it is thereby disabled from performing for so long as it is so disabled for up to a maximum of one hundred eighty (180) days, after which time the Parties will negotiate in good faith any permanent or transitory modifications of the terms of this Agreement that may be necessary to arrive at an equitable solution, unless the Party giving such notice has set out a reasonable timeframe and plan to resolve the effects of such force majeure and executes such plan within such timeframe. To the extent possible, each Party will use reasonable efforts to minimize the duration of any force majeure.

17.7 **Notices**. Any notice or request required or permitted to be given under or in connection with this Agreement will be deemed to have been sufficiently given if in writing and personally delivered or sent by certified mail (return receipt requested), e-mail transmission (receipt verified), or overnight express courier service (signature required), prepaid, to the Party for which such notice is intended, at the address set forth for such Party below:

If to Ionis, addressed to: Ionis Pharmaceuticals, Inc.
2855 Gazelle Court
Carlsbad, CA 92010
Attention: Chief Operating Officer
[***]@ionisph.com

If to Praxis, addressed to: Praxis Precision Medicines, Inc.
One Broadway Street
16th Floor
Cambridge, MA 02142
Attention: Chief Business Officer
stuart@praxismedicines.com

or to such other address as the Party to whom notice is to be given may have furnished to the other Party in writing in accordance herewith. Any notice given hereunder will be deemed to have been given (a) when delivered, if delivered personally or by e-mail, unless delivery occurs on a weekend or federal holiday, in which case the date of delivery will be the next Business Day; (b) on the next Business Day after deposit, if sent by overnight express courier service; and (c) on the third Business Day after the date of mailing, if sent by mail.

17.8 **Export Clause**. Each Party acknowledges that the laws and regulations of the United States restrict the export and re-export of commodities and technical data of United States origin. Each Party agrees that it will not export or re-export restricted commodities or the technical data of the other Party in any form without the appropriate United States and foreign government licenses.

17.9 **Waiver**. Neither Party may waive or release any of its rights or interests in this Agreement except in writing. The failure of either Party to assert a right hereunder or to insist upon compliance with any term or condition of this Agreement will not constitute a waiver of that right or excuse a similar subsequent failure to perform any such term or condition. No waiver by either Party of any condition or term in any one or more instances will be construed as a continuing waiver or subsequent waiver of such condition or term or of another condition or term.

17.10 **Entire Agreement; Modifications**. This Agreement (including the attached Appendices and Schedules), sets forth and constitutes the entire agreement and understanding between the Parties with respect to the subject matter herein, and all prior agreements, understanding, promises and representations, whether written or oral, with respect thereto are superseded hereby. Each Party confirms that it is not relying on any representations or warranties of the other Party except as specifically set forth in this Agreement. No amendment, modification, release or discharge will be binding upon the Parties unless in writing and duly executed by an authorized representative of each Party.

17.11 **Independent Contractors**. Nothing herein will be construed to create any relationship of employer and employee, agent and principal, partnership or joint venture between the Parties. Each Party is an independent contractor of the other. Neither Party will assume, either directly or indirectly, any liability of or for the other Party. Neither Party will have the authority to bind or obligate the other Party, and neither Party will represent that it has such authority.

17.12 **Interpretation**. Except as otherwise explicitly specified to the contrary, (a) references to a Section, exhibit, Appendix or Schedule means a Section of, or Schedule or exhibit or

Appendix to this Agreement, unless another agreement is specified, (b) the word "including" (in its various forms) means "including without limitation," (c) the words "will" and "shall" have the same meaning, (d) references to a particular statute or regulation include all rules and regulations thereunder and any predecessor or successor statute, rules or regulation, in each case as amended or otherwise modified from time to time, (e) words in the singular or plural form include the plural and singular form, respectively, (f) references to a particular Person include such Person's successors and assigns to the extent not prohibited by this Agreement, (g) unless otherwise specified, is in reference to United States dollars, and (h) the headings contained in this Agreement, in any exhibit or Appendix or Schedule to this Agreement are for convenience only and will not in any way affect the construction of or be taken into consideration in interpreting this Agreement.

17.13 **Further Actions**. Each Party will execute, acknowledge and deliver such further instruments, and do all such other acts, as may be necessary or appropriate to carry out the expressly stated purposes and the clear intent of this Agreement.

17.14 **Construction**. The terms of this Agreement represent the results of negotiations between the Parties and their representatives, each of which has been represented by counsel of its own choosing, and neither of which has acted under duress or compulsion, whether legal, economic or otherwise. Accordingly, the terms of this Agreement will be interpreted and construed in accordance with their usual and customary meanings, and each of the Parties hereby waives the application in connection with the interpretation and construction of this Agreement of any rule of law to the effect that ambiguous or conflicting terms contained in this Agreement will be interpreted or construed against the Party whose attorney prepared the executed draft or any earlier draft of this Agreement.

17.15 **Supremacy**. In the event of any express conflict or inconsistency between this Agreement and any Schedule or Appendix hereto, the terms of this Agreement will apply.

17.16 **Counterparts**. This Agreement may be signed in counterparts, each of which will be deemed an original, notwithstanding variations in format or file designation which may result from the electronic transmission, storage and printing of copies of this Agreement from separate computers or printers. Facsimile signatures and signatures transmitted via electronic mail in PDF format will be treated as original signatures.

17.17 **No Benefit to Third Parties**. The representations, warranties, covenants and agreements set forth in this Agreement are for the sole benefit of the Parties hereto and their successors and permitted assigns, and they will not be construed as conferring any rights on any other parties.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their representatives thereunto duly authorized as of the Effective Date.

PRAXIS PRECISION MEDICINES, **INC.**

By: /s/ Kiran Reddy

Name: Kiran Reddy

Title: **President & CEO**

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their representatives thereunto duly authorized as of the Effective Date.

IONIS PHARMACEUTICALS, **INC.**

By: /s/ Brett Monia
Name: Brett Monia, Ph.D.
Title: Chief Operating Officer

List of Appendices and Schedules

APPENDIX 1

DEFINITIONS

For purposes of this Agreement, the following capitalized terms will have the following meanings:

"***Additional Core IP***" has the meaning set forth in Section 9.3.3(a).

"***Additional Ionis In-License Agreements***" has the meaning set forth in Section 9.3.1(a).

"***Additional Milestone Payment***" has the meaning set forth in Section 9.1.3(a).

"***Additional Product-Specific Patents***" has the meaning set forth in Section 9.3.2(a).

"***Affiliate***" of an entity means any corporation, firm, partnership or other entity that, directly or indirectly through one or more intermediaries, controls, is controlled by or is under common control with a Party to this Agreement. An entity will be deemed to control another entity if it (a) owns, directly or indirectly, at least fifty percent (50%) of the outstanding voting securities or capital stock of such other entity, or has other comparable ownership interest with respect to any entity other than a corporation; or (b) has the power, whether pursuant to contract, ownership of securities or otherwise, to direct the management and policies of the entity.

"***Agreement***" has the meaning set forth in the Preamble.

"***Agreement Term***" has the meaning set forth in Section 13.1.

"***Annual***" *or* "***Annually***" means the period covering a Calendar Year or occurring once per Calendar Year, as the context requires.

"***APP***" means the bulk active pharmaceutical ingredient manufactured in accordance with cGMP (unless expressly stated otherwise) for a Product. The quantity of API will be the as-is gross mass of the API after lyophilization *(i.e.*, including such amounts of water, impurities, salt, heavy, metals, etc. within the limits set forth in the API specifications) and before release, retention, stability or characterization samples are removed (if needed).

"***Applicable Law***" means all applicable laws, statutes, rules, regulations and other pronouncements having the effect of law of any federal, national, multinational, state, provincial, county, city or other political subdivision, agency or other body, domestic or foreign, including any applicable rules, regulations, guidelines, or other requirements of any Regulatory Authority that may be in effect from time to time.

"***Approval***" means, with respect to a Product in a given jurisdiction, approval sufficient for the manufacture, distribution, use, marketing and sale of such Product in such jurisdiction in accordance with Applicable Laws.

"***ASO***" means an oligonucleotide compound, or analog, variant, mimic, or mimetic thereof, having a sequence that is at least six bases long and is designed to specifically and selectively bind to a particular nucleic acid transcript via the binding, partially or wholly, of such compound to the nucleic acid transcript.

"***Assignment Conditions***" has the meaning set forth in Section 17.1.2(b).

"***Assignment Criteria***" has the meaning set forth in Section 17.1.2(b).

"***Assignment Notice***" has the meaning set forth in Section 17.1.2(b).

"[***]" means the [***].

"[***]" has the meaning set forth in Section 3.8.

"[***]" has the meaning set forth in Section 3.8.

"***Business Day***" means any day other than a Saturday or Sunday on which banking institutions in New York, New York are open for business.

"***Calendar Quarter***" means the respective periods of three consecutive calendar months ending on March 31, June 30, September 30, and December 31.

"***Calendar Year***" means a year beginning on January 1 (or, with respect to 2019, the Effective Date) and ending on December 31.

"***cGMP***" means current Good Manufacturing Practices as specified in the United States Code of Federal Regulations, ICH Guideline Q7A, or equivalent laws, rules, or regulations of an applicable Regulatory Authority at the time of manufacture.

"***Change of Control***" means (a) the closing of a sale of all or substantially all of the assets of Praxis to which this Agreement relates to a Third Party in one transaction or series of transactions; (b) the closing of a merger or other business combination or transaction that results in a Third Party owning (directly or indirectly) more than fifty percent (50%) of the voting securities of Praxis or of its ultimate parent entity; (c) the closing of a transaction, following which a Third Party acquires direct or indirect ability or power to direct or cause the direction of the management and policies of Praxis or of its ultimate parent entity or otherwise direct the affairs of Praxis or of its ultimate parent entity, whether through ownership of equity, voting securities, beneficial interest, by contract or otherwise; or (d) the sale or disposition to a Third Party of all or substantially all of Praxis' assets taken as a whole. Notwithstanding the foregoing, (i) a transaction solely to change domicile of Praxis; (ii) any merger or consolidation between Praxis and one or more of its Affiliates (that is not an Affiliate specifically set up to facilitate a transaction contemplated by (a) through (d) above); or (iii) initiation of a public offering of Praxis' capital stock or any other financing transaction involving Praxis and one or more Third Parties whose business is primarily or principally that of financial investing, will not constitute a Change of Control.

"***Claims***" has the meaning set forth in Section 12.1.

"***Clinical Development Plan***" has the meaning set forth in Section 3.7.

"***Clinical Trial***" or "***Clinical Study***" means, with respect to a Product, a clinical study in humans that is conducted in accordance with good clinical practices and is designed to generate data in support or maintenance of a marketing application for such Product.

"***CMO***" has the meaning set forth in Section 3.6.1.

"***Co-Chairperson***" has the meaning set forth in Section 4.1.3.

"***Collaboration***" means the conduct of the activities under the Research Plan, the Development Candidate Identification Plan and the Clinical Development Plan in accordance with this Agreement.

"***Collaboration Know-How***" has the meaning set forth in Section 10.1.

"***Collaboration Patents***" has the meaning set forth in Section 10.1.

"***Collaboration IP***" has the meaning set forth in Section 10.1.

"***Collaboration Term***" has the meaning set forth in Section 3.10.

"***Commercialization***" means activities and processes directed to obtaining pricing and reimbursement approvals, launching, marketing, promoting, distributing, importing or selling a Product and all Manufacturing, supply and distribution of Product in support of such activities and processes. When used as a verb, "***Commercialize***" *or* "***Commercializing***" means to engage in Commercialization.

"***Commercially Reasonable Efforts***" means the level of effort, budget and resources normally used by a company in the pharmaceutical industry of similar size as the respective Party or in case there is no such industry standard, the level of effort, budget and resources normally used by the respective Party for a product owned or controlled by it, which is of similar profitability and at a similar stage in its research, development or product life, taking into account with respect to a product any issues of patent coverage, safety and efficacy, pricing, product profile, the proprietary position of the product, the competitive environment for the product and the likely timing of the product(s) entry into the market, the regulatory environment of the product and all other relevant scientific, technical and commercial factors.

"***Competing Field***" means the Treatment of [***], other than the Field. For clarity, the Competing Field includes the Treatment of [***] unless and until [***] is included in the Field pursuant to Section 7.2.

"***Completion***" means, with respect to a Clinical Study, the point in time at which the primary database lock for such study has occurred and, if such study has a statistical analysis plan, the data generated based on that primary database lock under the statistical analysis plan for such study are available.

"***Compound***" means an ASO that is designed to bind to the mRNA or pre-mRNA and down- regulate the expression of SCN2A gene products, where such ASO is discovered by Ionis prior to or during the Collaboration Term and which ASO meets the criteria set forth in the Development Candidate Identification Plan.

"***Confidential Information***" means any confidential or proprietary information or materials, patentable or otherwise, in any form (written, oral, photographic, electronic, magnetic, or otherwise) which is disclosed by or on behalf of the Disclosing Party or otherwise received or accessed by the Receiving Party from the Disclosing Party in the course of performing its obligations or exercising its rights under this Agreement, including trade secrets, Know-How, inventions or discoveries, proprietary information, formulae, processes, techniques and information relating to the past, present and future marketing, financial, and research and development activities of any product or potential product or useful technology of the Disclosing Party or its Affiliates and the pricing thereof. "**Confidential Information**" does not include information or materials that:

(a) was in the lawful knowledge and possession of the Receiving Party or its Affiliates prior to the time it was disclosed to, or learned by, the Receiving Party or its Affiliates, or was otherwise developed independently by the Receiving Party or its Affiliates without use of or reference to the Disclosing Party's Confidential Information, as evidenced by written records kept in the ordinary course of business, or other documentary proof of actual use by the Receiving Party or its Affiliates;

(b) was generally available to the public or otherwise part of the public domain at the time of its disclosure to the Receiving Party or its Affiliates;

(c) became generally available to the public or otherwise part of the public domain after its disclosure and other than through any act or omission of the Receiving Party or its Affiliates in breach of this Agreement; or

(d) was disclosed to the Receiving Party or its Affiliates, other than under an obligation of confidentiality, by a Third Party who had no obligation to the Disclosing Party or its Affiliates not to disclose such information to others.

"***Control" or*** "***Controlled***" means possession of the ability to grant a right, license or sublicense hereunder without violating the terms of any agreement with any Third Party in effect as of the date such right, license or sublicense is granted hereunder; *provided*, *however*, that if a Party has a right to grant a license or sublicense with respect to an item of intellectual property to the other Party only upon payment of compensation (including milestones or royalties) to a Third Party that would not have been payable had a license or sublicense not been granted or exercised under this Agreement *(*"***Third Party Compensation***"), then the first Party will be deemed to have "Control" of the relevant item of intellectual property only if the other Party agrees to bear the cost of such Third Party Compensation (subject to any permitted reductions under Section 9.3). The granting Party will provide the other Party with written notice promptly after becoming aware that any such license or sublicense could require the payment of any Third Party Compensation. Notwithstanding anything to the contrary under this Agreement, with respect to any Third Party that becomes an Affiliate of a Party after the Effective Date (including a Third Party acquirer), no intellectual property of such Third Party will be included in the licenses granted hereunder by virtue of such Third Party becoming an Affiliate of such Party, except to the extent that such Third Party directly participates in the performance of any activities under this Agreement.

"***Cover*,**" "***Covered*,**" *ox* "***Covering***" means, with respect to a patent, that, but for rights granted to a Person under such patent, the act of making, using or selling by such Person would infringe a Valid Claim included in such patent, or in the case of a patent that is a patent application, would infringe a Valid Claim in such patent application if it were to issue as a patent.

"***Development***" means, with respect to a Product, nonclinical and clinical development activities reasonably related to the development and submission of information to a Regulatory Authority, including the performance of chemical synthesis, toxicology, pharmacology, test method development and stability testing, manufacturing process development, formulation development, delivery system development, quality assurance and quality control development, statistical analysis, IND-Enabling Studies and Clinical Trials and any and all Manufacturing, supply and distribution of such Product in support of such activities. When used as a verb, "***Develop***" or "***Developing***" means to engage in Development.

"***Development Candidate***" means the Compound that is reasonably designated by Ionis' Research Management Committee for further Development and Commercialization in the Field in accordance with Ionis' standard procedures for designating development candidates as ready to start IND-Enabling Studies and Section 3.5.

"***Development Candidate Data Package***" means the data package [***]; *provided that* such package contains [***]. Such package will also contain [***] relating to such Development Candidate and a list of the Ionis Core Technology Patents and Ionis Manufacturing and Analytical Patents that Cover such Development Candidate and that have not previously been disclosed to Praxis. The checklist Ionis uses as of the Effective Date when reviewing potential development candidates for approval is attached hereto as APPENDIX 3.

"***Development Candidate Identification Plan***" has the meaning set forth in Section 3.5.1.

"***Disclosing Party***" has the meaning set forth in Section 15.1.

"***Discontinued Patent***" has the meaning set forth in Section 10.2.4.

"***Discontinued Product***" has the meaning set forth in Section 14.2.

"***Discovery***" means, with respect to a product containing an ASO (including a Product), a scope of work that includes human clinical lead optimization with the goal of identifying a development candidate.

"***Dollar***" or "***$***" means the lawful currency of the United States

"***Draft Report***" means, with respect to an IND-Enabling Toxicology Study, an integrated, audited draft report containing the toxicology data generated from such IND-Enabling Toxicology Study.

"***Effective Date***" has the meaning set forth in the Preamble.

"***EMA***" means the European Medicines Agency, or any successor agency thereto.

"***Expert***" has the meaning set forth in Section 7.2.2(a).

"***Expert Evaluation Commencement Date***" has the meaning set forth in Section 7.2.2(a).

"***External Expenses***" means the actual cost on a Dollar for Dollar basis with no mark-up.

"***FDA***" means the U.S. Food & Drug Administration, or any successor agency thereto.

"***Field***" means the Treatment of any and all forms of epilepsy and/or neurodevelopmental disorders in each case caused by any mutation of the SCN2A gene, other than [***], including as such definition may be amended pursuant to Section 7.2.

"***First Commercial Sale***" means, with respect to a Product, the first sale of such Product by Praxis, its Affiliates or Sublicensees to a Third Party in a particular country after Approval of the Product has been obtained in such country.

"***FTE Costs***" means the cost of Ionis' time incurred at performing work under this Agreement at the then-applicable FTE Rate.

"***FTE Rate***" means for a given Calendar Year the rate that a Party charges for a full time equivalent with the appropriate technical skill (such Calendar Year consisting of at least a total of [***] per year of dedicated effort, excluding vacations and holidays). The rate is based on [***].

"***Full Royalty Rate***" has the meaning set forth in Section 9.2.1.

"***GAAP***" means generally accepted accounting principles of the United States consistently applied, or for any non-US entity (a) international financial reporting standards (IFRS) consistently applied, or (b) for such non-US entity that does not use IFRS, the generally accepted accounting rules in its home jurisdiction for entities of a similar size in the same industry, consistently applied throughout its organization.

"***Generic Product***" means, with respect to a Product, one or more Third Party products having the same or substantially the same active pharmaceutical ingredient as such Product and for which in the U.S. an ANDA has been filed naming such Product as the reference listed drug, or outside of the U.S., an equivalent process to the ANDA has been filed where bioequivalence to such Product has been asserted, and such product(s) taken in the aggregate has a market share (measured in number of prescriptions during a Calendar Quarter with the numerator of such fractional share being the Generic Products taken in the aggregate, and the denominator being the total of the Generic Products taken in the aggregate plus the Product taken in the aggregate, as provided by IQVIA) during the applicable Calendar Quarter in such country of [***].

"***IFRS***" means the International Financial Reporting Standards, the set of accounting standards and interpretations and the framework in force on the Effective Date and adopted by the European Union as issued by the International Accounting Standards Board (IASB) and the International Financial Reporting Interpretations Committee (IFRIC), as such accounting standards may be amended from time to time.

"***Incremental Tax Cost***" has the meaning set forth in Section 17.1.

"***IND***" means an Investigational New Drug Application (as defined in the Food, Drug and Cosmetic Act, as amended) filed with the FDA or any equivalent application for authorization to commence human clinical trials in other countries or regulatory jurisdictions.

"***IND-Enabling Toxicology Study***" or "***IND-Enabling Toxicology Studies***" means the non-human primate toxicology studies designed or otherwise required to meet the requirements for filing an IND.

"***IND-Enabling Toxicology Costs***" has the meaning set forth in Section 3.6.2.

"***IND-Enabling Toxicology Plan***" has the meaning set forth in Section 3.6.1.

"[***]" has the meaning set forth in Section 9.1.3(b).

"[***]" has the meaning set forth in Section 9.1.3(b).

"***Initiation***" means, (i) with respect to any Clinical Study, dosing of the first human subject in such Clinical Study; and (ii) with respect to a nonclinical study, the dosing of the first nonhuman animal in such nonclinical study. When used as a verb, "***Initiate***" means (i) with respect to a Clinical Study, to dose the first human subject in such Clinical Study; and (ii) with respect to a nonclinical study, to dose the first non-human animal in such nonclinical study.

"***Integrated Product Plan***" or "***IPP***" has the meaning set forth in Section 8.2.

"***Ionis Attribution Language***" has the meaning set forth in Section 16.4.2.

"***Ionis Core Technology Know-How***" means all Know-How Controlled by Ionis or its Affiliates on the Effective Date or at any time during the Agreement Term necessary or reasonably useful to Research, Develop or Commercialize a Product that relates generally to ASOs, other than Ionis Product-Specific Know-How and Ionis Manufacturing and Analytical Know-How.

"***Ionis Core Technology Patents***" means all Patent Rights Controlled by Ionis or its Affiliates on the Effective Date or at any time during the Agreement Term, necessary or reasonably useful to Research, Develop or Commercialize a Product claiming subject matter generally applicable to ASOs, other than Ionis Product-Specific Patents and Ionis Manufacturing and Analytical Patents. A list of Ionis Core Technology Patents as of the Effective Date is set forth on APPENDIX 5.

"***Ionis Indemnitee***" has the meaning set forth in Section 12.1.

"***Ionis Internal ASO Safety Database***" has the meaning set forth in Section 8.4.7(a).

"***Ionis Know-How***" means the Ionis Core Technology Know-How and the Ionis Product-Specific Know-How.

"***Ionis Manufacturing and Analytical Know-How***" means Know-How that relates to the synthesis or analysis of a Product regardless of sequence or chemical modification, owned, used, developed

by, or licensed to Ionis or its Affiliates, in each case to the extent Controlled by Ionis or its Affiliates on the Effective Date or at any time during the Agreement Term. Ionis Manufacturing and Analytical Know-How do not include the Ionis Know-How.

"***Ionis Manufacturing and Analytical Patents***" means Patent Rights that claim Manufacturing Technology owned, used, developed by, or licensed to Ionis or its Affiliates, in each case to the extent Controlled by Ionis or its Affiliates on the Effective Date or at any time during the Agreement Term. Ionis Manufacturing and Analytical Patents do not include any Ionis Product-Specific Patents or Ionis Core Technology Patents. A list of Ionis Manufacturing and Analytical Patents as of the Effective Date is set forth on APPENDIX 6.

"***Ionis Negotiation Notice***" has the meaning set forth in Section 7.2.

"***Ionis Product-Specific Know-How***" means all Know-How Controlled by Ionis or its Affiliates on the Effective Date or at any time during the Agreement Term necessary or reasonably useful to Research, Develop or Commercialize a Product in the Field or disclosed by Ionis to Praxis and specifically relating to (a) the composition of matter of a Product or (b) methods of using a Product for the Field; *provided however*, Know-How Controlled by Ionis or any of its Affiliates that (i) consists of subject matter applicable to ASO compounds or products in general or (ii) relates to an ASO compound that does not specifically down-regulate expression of SCN2A gene products via the binding, partially or wholly, of such compound to mRNA or pre-mRNA encoded by SCN2A, will not be considered Ionis Product-Specific Know-How, and in each case of (i) and (ii), such Know-How will be considered Ionis Core Technology Know-How.

"***Ionis Product-Specific Patents***" means all Patent Rights Controlled by Ionis or its Affiliates on the Effective Date or at any time during the Agreement Term Covering (a) the composition of matter of a Product, or (b) methods of using a Product as a prophylactic or therapeutic in the Field; *provided however*, Patent Rights Controlled by Ionis or any of its Affiliates that include only claims that are directed to (i) subject matter applicable to ASO compounds or Products in general or (ii) an ASO compound that does not specifically down-regulate expression of SCN2A gene products via the binding, partially or wholly, of such compound to mRNA or pre-mRNA that encodes SCN2A, will not be considered Ionis Product-Specific Patents, and in each case of (i) and (ii), such Patent Rights will be considered Ionis Core Technology Patents. A list of Ionis Product-Specific Patents as of the Effective Date is set forth on APPENDIX 4.

"***Ionis Research Costs***" has the meaning set forth in Section 3.2.

"***Ionis Supported Pass-Through Costs***" means [***].

"***JAMS***" has the meaning set forth in Section 7.2.2(a).

"***JSC***" has the meaning set forth in Section 4.1.1.

"***Know-How***" means inventions, technical information, know-how and materials, including technology, data, compositions, formulas, biological materials, assays, reagents, constructs, compounds, discoveries, procedures, processes, practices, protocols, methods, techniques, results of experimentation or testing, knowledge, trade secrets, skill and experience, in each case whether or not patentable or copyrightable, and in each case that are unpatented.

"***License Fee***" means the amount set forth in Section 9.1.1.

"***Licensed IP***" means the Licensed Know-How, the Licensed Patents and Ionis' interest in any jointly owned Collaboration IP.

"***Licensed Know-How***" means Ionis Know-How, Ionis Manufacturing and Analytical Know-How and Ionis' interest in any jointly owned Collaboration Know-How.

"***Licensed Patents***" means the Ionis Product-Specific Patents, Ionis Core Technology Patents, Ionis Manufacturing and Analytical Patents and Ionis' interest in any jointly owned Collaboration Patents. For clarity, Licensed Patents that are jointly owned by Ionis and Praxis will count toward the calculation of the Royalty Period and the applicable royalty rates under Section 9.2.

"***Losses***" has the meaning set forth in Section 12.1.

"***Major Market***" means [***].

"***Manufacturing***" means any activity involved in or relating to the manufacturing, quality control testing (including in-process, release and stability testing), releasing, storage or packaging, for nonclinical, clinical or commercial purposes, of API component or the bulk active pharmaceutical ingredient for a Product in finished form. When used as a verb, "***Manufacture***" means to engage in Manufacturing.

"***Manufacturing Technology***" means (a) methods and materials used in the synthesis or analysis of an ASO regardless of sequence or chemical modification, and (b) methods of Manufacturing components of an ASO.

"***Minimum Third Party Payments***" means [***].

"***NDA***" means, with respect to a Product, (a) a new drug application, including all amendments and supplements thereto, filed with the FDA in the United States to obtain Approval of such Product in the United States, or (b) the equivalent application filed with any other Regulatory Authority in any other jurisdiction to obtain Approval for such Product in such jurisdiction.

"***Negotiation Period***" has the meaning set forth in Section 7.2.

"***Net Sales***" means, with respect to any Product, the amount billed by Praxis or its Affiliates (each a "***Selling Party***"**)** for sales of such Product in arm's length transactions to Third Parties in all countries worldwide, after deduction (if not already deducted in the amount invoiced) of the following items with respect to sales of such Product:

(a) trade, cash, and/or quantity discounts, retroactive price reductions, charge back payments, reimbursements and rebates actually taken and allowed, including discounts or rebates to governmental or managed care organizations;

(b) credits or allowances given or recorded for rejection or return of previously sold product (including, without limitation, returns of such Product in connection with recalls or withdrawals);

(c) freight out, postage, shipping and insurance charges actually incurred for delivery of such Product;

(d) any tax, tariff, duty or government charge (including any tax such as a value added or similar tax or government charge other than an income tax) levied on the sale, use, transportation or delivery of such Product and borne by the seller thereof without reimbursement from any Third Party; and

(e) amounts written off by reason of uncollectible debt.

Net Sales and all of the foregoing deductions from the gross invoiced sales prices of Product will be determined in accordance with the Selling Party's standard accounting procedures and in accordance with GAAP. In the event that a Selling Party makes any adjustments to such deductions after the associated Net Sales have been reported pursuant to this Agreement, the adjustments will be reported and reconciled with the next report and payment of any royalties due.

Net Sales will not include (i) any payments among Selling Parties, unless such paying party is the end user of the relevant Product or (ii) any payments in consideration of supplies of the applicable Product for use in clinical trials.

The Parties agree that any reasonable definition of "net sales" customarily used in pharmaceutical industry technology licensing or research collaboration contracts that is subsequently agreed to by a Party (or a Third Party acquirer or assignee) and a Sublicensee in an arms-length transaction under a particular sublicense will replace the definition of Net Sales in this Agreement and will be used in calculating the royalty payment to the other Party on sales of Products sold pursuant to such sublicense and due under this Agreement, in each case subject to Section 9.3.

"***Option***" has the meaning set forth in Section 5.1.

"***Option Deadline***" has the meaning set forth in Section 5.1.

"***Patent Rights***" means (a) patents, patent applications and similar government-issued rights protecting inventions in any country or jurisdiction however denominated, (b) all priority applications, divisionals, continuations, substitutions, continuations-in-part of and similar applications claiming priority to any of the foregoing, and (c) all patents and similar government- issued rights protecting inventions issuing on any of the foregoing applications, together with all registrations, reissues, renewals, re-examinations, confirmations, supplementary protection certificates, and extensions of any of (a), (b) or (c).

"***Payment Trigger***" has the meaning set forth in Section 9.1.3(a).

"***Performance Milestone***" has the meaning set forth in Section 8.3.

"***Permitted Licenses***" means (a) licenses granted by Ionis after the Effective Date to any Third Party under the Ionis Core Technology Patents or Ionis Manufacturing and Analytical Patents solely to (i) conduct nonclinical research, or (ii) enable such Third Party to manufacture or formulate ASOs, where such Third Party is engaged in providing contract manufacturing services; and (b) material transfer agreements with academic collaborators or non-profit institutions in connection with Ionis' activities under the Research Plan approved by Praxis, such approval not to be unreasonably withheld or delayed.

"***Person***" means any corporation, limited or general partnership, limited liability company, joint venture, trust, unincorporated association, governmental body, authority, bureau or agency, any other entity or body, or an individual.

"***Phase 1/2 Study***" means, with respect to a Product, a first Clinical Study in humans of such Product, as further defined in 21 C.F.R. § 312.21(a) or the corresponding regulation in jurisdictions other than the United States.

"***Phase 3 Study***" *or* "***Phase 3 Trial***" means a human clinical trial of a Product on a sufficient number of patients that is designed to establish that the Product is safe and efficacious for its target patient population, and to determine warnings, precautions and adverse reactions that are associated with such Product in the dosage range to be prescribed, which trial is intended to generate data sufficient for the filing of an NDA and Approval of the Product, as described in 21 C.F.R. 312.21(c) for the United States, or a similar Clinical Trial prescribed by the Regulatory Authorities in a foreign country.

"***Pivotal Study***" means (a) a Phase 3 Trial, or (b) a human clinical trial of a Product that satisfies the requirements of 21 C.F.R. § 312.21(c) and is a registration trial designed to establish statistically significant efficacy and safety of such Product for the purpose of enabling the preparation and submission of application for an NDA, MAA, JNDA or similar application for marketing approval to the competent Regulatory Authorities in a given country, as evidenced by (i) an agreement with or statement from the FDA on a Special Protocol Assessment or equivalent in another country, or (ii) other guidance or minutes issued by the FDA for such registration trial or equivalent in another country, or (iii) Praxis' public statements, in each case where the results of such clinical trial are intended (if supportive) to be used to establish both safety and efficacy of such Product in patients that are the subject of such trial and serve as the basis for obtaining initial or supplemental Approval in the United States of such Product. For clarity, any compassionate use dosing with respect to a Product will not be considered the Initiation of a Pivotal Study with respect to such Product.

"***Praxis***" has the meaning set forth in the Recitals.

"***Praxis Background Patents***" means any Patent Rights Controlled by Praxis or its Affiliates (i) as of the Effective Date or (ii) at any time during the Agreement Term that are developed by Praxis or its Affiliates outside the scope of this Agreement, in each case of (i) and (ii), Covering (a) the composition of matter of a Product, or (b) any ASO compound that specifically down- regulates expression of SCN2A gene products via the binding, partially or wholly, of such compound to mRNA or pre-mRNA that encodes SCN2A, including any method of using such ASO compound. For clarity, Praxis Background Patents do not include any Patent Rights licensed by Ionis from RogCon under a separate agreement.

"***Praxis Background Patents ROFN Period***" has the meaning set forth in Section 5.3.3(b).

"***Praxis Indemnitee***" has the meaning set forth in Section 12.2.

"***Praxis Negotiation Notice***" has the meaning set forth in Section 7.2.

"***Praxis Supported Pass-Through Costs***" means [***].

"***Prior Agreements***" means the agreements 1 listed on APPENDIX 2.

"***Product***" means any product containing the Development Candidate or the [***] as an active pharmaceutical ingredient regardless of its finished form, formulation, dosage, packaging or labeling. For clarity, all products with the same active pharmaceutical ingredient(s) will be deemed a single "Product" hereunder.

"***Proposal***" has the meaning set forth in Section 7.2.

"***Prosecuting Party***" has the meaning set forth in Section 10.2.1(b).

"***Rebuttal***" has the meaning set forth in Section 7.2.2(a).

"***Receiving Party***" has the meaning set forth in Section 15.1.

"***Regulatory Authority***" means any governmental authority, including the FDA or EMA, that has responsibility for regulating or otherwise exercising authority with respect to the Development, Manufacture, marketing, sale or other Commercialization of a Product in any country.

"***Regulatory Authority Incentive***" has the meaning set forth in Section 9.5.

"***Related Compounds***" has the meaning set forth in Section 3.5.2.

"***Research***" means conducting research activities with Compounds, including nonclinical research, gene function, gene expression and target validation research, lead optimization, and which may include small pilot toxicology studies but excludes Development, and Commercialization. When used as a verb, "***Researching***" means to engage in Research.

"***Research Plan***" has the meaning set forth in Section 3.1.

"***RMC***" has the meaning set forth in Section 3.5.2.

"***RogCon***" means "RogCon Inc." or any successor entity thereto.

"***RogCon In-License Agreement***" means that certain License Agreement between Praxis and RogCon, effective as of September 11, 2019, including as it may be amended from time to time.

"***Royalty Period***" has the meaning set forth in Section 9.2.3.

"***Royalty Rate Buy-Down Payment***" has the meaning set forth in Section 9.2.2.

"***SCN2A***" means sodium voltage-gated channel alpha subunit 2; Gene ID 6326.

"***Second Interest Payment***" has the meaning set forth in Section 9.1.3(b).

"***Selected Proposal***" has the meaning set forth in Section 7.2.2(b).

"***Selected Proposal ROFNPeriod***" has the meaning set forth in Section 7.2.2(d)(i).

"***Senior Representatives***" has the meaning set forth in Section 17.4.1.

"***Sublicense***" means an agreement or series of agreements or transactions pursuant to which Praxis or a Praxis Affiliate grants a Third Party the right to practice an Ionis Patent Right (whether by license, covenant not to sue or other right or immunity) or an option to obtain such a right, in either case, to Develop or Commercialize a Product. Any such series of agreements or transactions with the same Third Party or related Third Parties will be aggregated to constitute a single Sublicense for the purpose of determining Sublicense Revenue. "Sublicense" excludes a right granted to a Third Party solely to distribute or resell a Product sold to it by Praxis or its Affiliate, *provided that* Praxis pays royalties to Ionis on the sale of Product by Praxis or its Affiliate to such Third Party for consideration and *provided further* that such Third Party is not responsible for the marketing or promotion of the Product.

"***Sublicensee***" means any Third Party that enters into a Sublicense with Praxis or its Affiliate to Develop and/or Commercialize a Product. For purposes of the royalty obligations set forth in Section 9.2, "Sublicensee" will not include any CMO, contract research organization or other contract service provider acting for the benefit of Praxis that does not sell Product.

"***Sublicense Revenue***" means any consideration, cash or nonmonetary, that Praxis receives from a Sublicensee under any agreement or series of agreements that include the grant of any Sublicense (or right to receive a Sublicense), including but not limited to license fees, option fees, up-front payments, milestone payments, royalties, royalty pre-payments, profit sharing, license maintenance fees and payments for Praxis equity above the fair market value of such equity, other than: (a) [***], (b) [***], (c) [***], (d) [***], (e) [***] and (f) [***]. If Praxis receives any non-cash Sublicense Revenue, Praxis will [***] (i) [***] or (ii) [***]. To the extent that Sublicense Revenue represents an unallocated combined payment for amounts received for more than one product, such Sublicense Revenue for calculating payments due to Ionis will be [***]. For clarity, any consideration that RogCon receives from Praxis under any agreement or series of agreements related to the right to receive a share of profits based on the Commercialization of any Products hereunder will not be deemed "**Sublicense Revenue**" for purposes of this Agreement.

"***Supporting Memorandum***" has the meaning set forth in Section 7.2.2(a).

"***Technology Transfer Activities***" has the meaning set forth in Section 7.8.2.

"***Technology Transfer Plan***" has the meaning set forth in Section 7.8.1.

"***Third Party***" means a Person or entity other than the Parties or their respective Affiliates.

"***Transition Services***" has the meaning set forth in Section 14.2.

"***Treatment***" means, with respect to a condition, the cure, reduction, mitigation, prevention, slowing or halting the progress of, or otherwise management of such condition or the symptoms thereof.

"***Valid Claim***" means a claim (a) of any issued, unexpired United States or foreign Patent Right, which will not, in the country of issuance, have been donated to the public, disclaimed, nor held invalid or unenforceable by a court of competent jurisdiction in an unappealed or unappealable decision, or (b) of any United States or foreign patent application within a Patent Right, which will not, in the country in question, have been cancelled, withdrawn, abandoned nor been pending for more than [***] from the date of filing of the earliest patent application to which such patent application claims priority in the country of question, not including in calculating such [***] period of time in which such application is in interference or opposition or similar proceedings or time in which a decision of an examiner is being appealed. Notwithstanding the foregoing, on a country-by-country basis, a patent application pending for more than [***] will not be considered to have any Valid Claim for purposes of this Agreement unless and until a patent meeting the criteria set forth in clause (a) above with respect to such application issues.

APPENDIX 2

[***]

APPENDIX 3

[***]

APPENDIX 4

[***]

APPENDIX 5

[***]

APPENDIX 6

[***]

SCHEDULE 3.7

[***]

SCHEDULE 4.1.2

[***]

SCHEDULE 4.3

[***]

SCHEDULE 8.2

[***]

SCHEDULE 14.3

[***]

Exhibit 21.1

SUBSIDIARIES OF PRAXIS PRECISION MEDICINES, INC.

Name	Jurisdiction of Formation / Incorporation
Praxis Security Corporation	Massachusetts
Praxis Precision Medicines Australia PTY LTD	Australia