UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2020

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission file number: 001-36544

Sage Therapeutics, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**27-4486580**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
215 First Street Cambridge, Massachusetts	**02142**
(Address of Principal Executive Offices)	**(Zip Code)**

(617) 299-8380

(Registrant's Telephone Number, Including Area Code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.0001 per share	SAGE	The Nasdaq Global Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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 pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the registrant's voting and non-voting common stock held by non-affiliates of the registrant (without admitting that any person whose shares are not included in such calculation is an affiliate) as of June 30, 2020 was approximately $2,120,561,372, computed by reference to the closing price of the registrant's common stock on the Nasdaq Global Market reported for such date.

As of February 17, 2021, there were 58,381,933 shares of common stock, $0.0001 par value per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of this Annual Report on Form 10-K incorporates by reference certain information from the registrant's definitive Proxy Statement for its 2021 annual meeting of shareholders, which the registrant intends to file pursuant to Regulation 14A with the Securities and Exchange Commission not later than 120 days after the registrant's fiscal year end of December 31, 2020. Except with respect to information specifically incorporated by reference in this Form 10-K, the Proxy Statement is not deemed to be filed as part of this Form 10-K.

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Cautionary Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K, or Annual Report, contains forward-looking statements that involve risks and uncertainties. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. All statements other than statements of historical facts contained in this Annual Report are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may", "will", "should", "expects", "intends", "plans", "anticipates", "believes", "estimates", "predicts", "potential", "continue" or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- our views as to potential future results of our ongoing commercialization efforts in the U.S. with respect to ZULRESSO® (brexanolone) CIV injection, which is approved in the U.S. for the treatment of postpartum depression, or PPD, in adults;
- our planned clinical and regulatory activities with respect to zuranolone (SAGE-217) for the treatment of major depressive disorder, or MDD, and PPD and related timelines, potential regulatory pathways, and the potential for zuranolone in those indications and in additional indications, including our view of the potential product profile and treatment paradigm impact for zuranolone, if successfully developed and approved;
- our plans for development of our other product candidates for the treatment of brain health diseases and disorders, and potentially for other indications, our plans with respect to other research and development activities and expected timelines for our planned activities;
- our ability, within the expected time frames, to initiate clinical trials and non-clinical studies of existing or future product candidates, including pivotal clinical trials, and to successfully complete and announce the results of ongoing or future clinical trials;
- our plans and potential outcomes with respect to interactions with regulatory authorities;
- our plans for and the potential costs, benefits and outcomes of our existing collaborations, and our plans for and potential outcomes of any additional business development efforts;
- our plans and expectations with respect to the potential development of any product or product candidate for markets outside the U.S.;
- our estimates regarding the level of expenses we may incur in connection with our activities; use of cash and projected cash on hand at any given timepoint; timing of future cash needs; capital requirements; sources of future financings; and our ability to obtain additional financing when needed to fund future operations;
- our expectations with respect to the availability of supplies of ZULRESSO and our product candidates, and the expected performance of our third-party manufacturers;
- our ability to obtain and maintain intellectual property protection for our proprietary assets and other forms of exclusivity relevant to our business;
- the estimated number of patients with diseases or disorders of interest to us; and the potential size of the market for ZULRESSO in PPD and for our product candidates in the indications we are studying or plan to study;
- the potential for our current product and current or future product candidates, if successfully developed and approved, for the indications and in the markets for which they are approved; and our ability to serve those markets;
- the potential for success of competing products that are or become available for PPD or MDD or any of the other indications that we are pursuing or may pursue in the future with our products and our product candidates;
- the impact of the COVID-19 pandemic on our activities, business and results of operations, and the potential success of our efforts to address or mitigate such impact; and
- other risks and uncertainties, including those listed under Part I, Item 1A, Risk Factors.

Any forward-looking statements in this Annual Report reflect our current views with respect to future events and with respect to our business and future 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. Factors that may cause actual results to differ materially from current expectations include, among other things, those described under Part I, Item 1A, Risk Factors and elsewhere in this Annual Report. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

We may from time to time provide estimates, projections and other information concerning, among other things, our industry, the general business environment, and the markets for certain diseases, including estimates regarding the potential size of those markets and the estimated incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties, and actual events, circumstances or numbers, including actual disease prevalence rates and market size, may differ materially from the information reflected in this Annual Report. Unless otherwise expressly stated, we obtained this industry and business information, market data, prevalence information and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties; industry, medical and general publications; government data; and similar sources, in some cases applying our own assumptions and analysis that may, in the future, prove not to have been accurate.

Summary of Risks Related to our Business

Our business, prospects, financial condition, and operating results are subject to numerous risks and uncertainties that you should be aware of before making an investment decision, as more fully described under Part I, Item 1A, Risk Factors and elsewhere in this Annual Report. These risks may include, but are not limited to, the following:

- Our commercialization efforts in the U.S. with respect to ZULRESSO® (brexanolone) CIV injection may never be successful and we may never be able to generate meaningful revenues, or revenues at levels or on timing necessary to support our investment and goals.

- Our future business depends heavily on our and our collaborators' ability to successfully develop and gain regulatory approval of our current product candidates, including zuranolone (SAGE-217), which is in Phase 3 clinical development for major depressive disorder and postpartum depression. We cannot be certain that we or our collaborators will be able to complete ongoing clinical trials, initiate new clinical trials or announce results of clinical trials on the timelines we expect or at all. We cannot be certain that we or our collaborators will be able to successfully develop, file for or obtain regulatory approval for, or successfully commercialize, any of our current or future product candidates.

- Obtaining regulatory approval to market any of our product candidates is a complex, lengthy, expensive and uncertain process, and the U.S. Food and Drug Administration and regulatory authorities outside of the U.S. may delay, limit or deny approval of any of our product candidates for many reasons.

- If the affected populations for indications our products and product candidates are targeting or the addressable markets within such populations are smaller than we anticipate, our ability to achieve profits from the commercialization of our products and product candidates, if successfully developed and approved, at the levels or on the timing we expect could be materially adversely impacted.

- Positive results from non-clinical studies and clinical trials of our product candidates are not necessarily predictive of the results of later non-clinical studies and clinical trials of our product candidates in the same indications or other indications. Interim results from non-clinical studies and clinical trials may not be predictive of results of such non-clinical studies or clinical trials once completed.

- If serious adverse events or other undesirable side effects are identified during the use of any of our marketed products or product candidates, including during commercial use or in clinical trials, such events may adversely affect market acceptance or result in other significant negative consequences for an approved product; delay or prevent further development or regulatory approval with respect to product candidates; or cause regulatory

authorities to require labeling statements, such as boxed warnings, or a Risk Evaluation and Mitigation Strategy, on approved products.

- We rely completely on third-party suppliers to manufacture commercial supplies of ZULRESSO and clinical drug supplies for our product candidates.
- Our current product candidates, if successfully developed and approved, and other future products, if any, may not achieve broad market acceptance or reimbursement at sufficient levels, which may limit the revenue that we generate from sales of such products.
- Competing therapies may exist or could emerge that adversely affect the amount of revenue we are able to generate from the sale of ZULRESSO or any of our current or future product candidates, if successfully developed and approved.
- Our existing and future collaborations, if any, may not lead to the successful development or regulatory approval of product candidates or commercialization of products.
- We may not be successful in our efforts to identify new targets, generate new compounds, and successfully bring such new compounds through investigational new drug application-enabling non-clinical studies.
- If we are unable to adequately protect our proprietary technology, or obtain and maintain issued patents that are sufficient to protect our products or product candidates, others could compete against us more directly, which would have a material adverse impact on our business, results of operations, financial condition and prospects.
- For certain of our products and product candidates, we are dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing certain of our products or product candidates, if approved.
- Existing or future laws, regulations, executive orders or policies aimed at reducing healthcare costs may have a material adverse effect on our business or results of operation.
- We are subject to healthcare laws and regulations, which could expose us to the risk of criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings if we or our employees are alleged or determined not to have complied with such laws and regulations.
- We are a biopharmaceutical company with a limited operating history, and have not generated significant revenue to date. We have incurred significant operating losses since our inception, and anticipate that we will incur continued losses for the foreseeable future.
- We may need to raise additional funding, which may not be available on acceptable terms, or at all. Raising additional capital, even opportunistically, may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights.
- The COVID-19 pandemic may continue to adversely impact our business, including our sales of ZULRESSO and our initiation, conduct and completion of clinical trials.

PART I

All brand names or trademarks appearing in this report are the property of their respective owners. Unless the context requires otherwise, references in this report to "Sage," the "Company," "we," "us," and "our" refer to Sage Therapeutics, Inc. and its subsidiaries.

Item 1. Business

Overview

We are a biopharmaceutical company committed to developing and commercializing novel medicines with the potential to transform the lives of people with debilitating disorders of the brain. Our first product, ZULRESSO® (brexanolone) CIV injection, is approved in the U.S. for the treatment of postpartum depression, or PPD, in adults. We have a portfolio of other product candidates with a current focus on modulating two critical central nervous system, or CNS, receptor systems, GABA and NMDA. The GABA receptor family, which is recognized as the major inhibitory neurotransmitter in the CNS, mediates downstream neurologic and bodily function via activation of GABAA receptors. The NMDA-type receptors of the glutamate receptor system are a major excitatory receptor system in the CNS. Dysfunction in these systems is implicated in a broad range of CNS disorders. We are currently targeting diseases and disorders of the brain with three key focus areas: depression, neurology and neuropsychiatry.

Our first product, ZULRESSO, is a proprietary intravenous, or IV, formulation of brexanolone, approved in the U.S. as a treatment for PPD in adults. Brexanolone is chemically identical to allopregnanolone, a naturally occurring neuroactive steroid that acts as a positive allosteric modulator of GABAA receptors. We launched ZULRESSO commercially in the U.S. in June 2019.

Our next most advanced product candidate is zuranolone (SAGE-217), a novel oral compound being developed for certain affective disorders, including major depressive disorder, or MDD, and PPD. Zuranolone is a neuroactive steroid that, like brexanolone, is a positive allosteric modulator of GABAA receptors, targeting both synaptic and extrasynaptic GABAA receptors. We are currently conducting three Phase 3 placebo-controlled clinical trials of zuranolone – the WATERFALL Study and the CORAL Study in MDD, and the SKYLARK Study in PPD – as well as an open-label Phase 3 clinical trial in MDD known as the SHORELINE Study. We expect to report topline results from the WATERFALL Study in the first half of 2021, and topline results from the other zuranolone Phase 3 clinical trials at various times throughout the remainder of 2021.

In addition to zuranolone, we have a portfolio of other novel compounds that target GABAA receptors, including SAGE-324. SAGE-324 is a novel GABAA receptor positive allosteric modulator intended for chronic oral dosing. We are currently conducting a placebo-controlled Phase 2 clinical trial evaluating the safety and efficacy of SAGE-324 in the treatment of essential tremor, known as the KINETIC Study. We expect to report topline data from this study in early 2021. If the results of the KINETIC Study support further development, we expect to initiate additional development activities including the next placebo-controlled Phase 2 clinical trial of SAGE-324 in essential tremor in late 2021 to explore dose and frequency, including potential formulations. We believe SAGE-324 also has potential for the treatment of a number of other neurological conditions, including epilepsy and Parkinson's disease.

We are jointly developing zuranolone and SAGE-324 in the U.S. with Biogen MA Inc., or BIMA, and Biogen International GmbH, or, together with BIMA, Biogen, under a collaboration and license agreement, or the Biogen Collaboration Agreement, that became effective in December 2020. Under the Biogen Collaboration Agreement, we will also jointly commercialize products containing zuranolone, which we refer to as Licensed 217 Products, and products containing SAGE-324, which we refer to as Licensed 324 Products, with Biogen in the U.S. if our development efforts are successful. We refer to Licensed 217 Products and Licensed 324 Products individually as a Product Class and collectively as the Licensed Products. In addition, we have granted Biogen sole rights to develop and commercialize the Licensed Products outside the U.S., other than in Japan, Taiwan and South Korea, or the Existing Partner Territory, where we have granted rights to Shionogi & Co., Ltd., or Shionogi, with respect to zuranolone. We refer to the territories outside the U.S.

to which Biogen has rights under the Biogen Collaboration Agreement with respect to the applicable Licensed Product as the Biogen Territory.

Our second area of focus for future clinical development is novel compounds that target the NMDA receptor. The first product candidate selected for development from this program is SAGE-718, an oxysterol-based positive allosteric modulator of the NMDA receptor, which we are exploring in certain cognition-related disorders associated with NMDA receptor dysfunction, including cognition dysfunction associated with diseases such as Huntington's disease, Parkinson's disease and Alzheimer's disease. We are currently conducting a Phase 2a open-label study of SAGE-718 evaluating patients with Parkinson's disease cognitive dysfunction, known as the PARADIGM Study, and a Phase 2a open-label clinical trial of SAGE-718 in patients with Alzheimer's disease mild cognitive impairment and mild dementia, known as the LUMINARY Study. We expect to report topline data from the PARADIGM Study in early 2021 and from the LUMINARY Study in late 2021. We plan to initiate further development activities including a placebo-controlled Phase 2 clinical trial with SAGE-718 in late 2021 with the indication and design to be informed by the results of these and earlier clinical trials.

We have other compounds at earlier stages of development with a focus on both acute and chronic brain health disorders. Our early-stage GABAA modulators include SAGE-689, expected to begin Phase 1 development in 2021 as a potential intramuscular therapy for disorders associated with acute GABA hypofunction, and SAGE-319, intended to be studied as an oral therapy for potential use in disorders of social interaction. Our early-stage NMDA modulators include SAGE-904, in Phase 1 development as a potential oral therapy for disorders associated with NMDA hypofunction, and SAGE-421, intended to be studied as a potential oral therapy for certain neurodevelopmental disorders and cognitive recovery and rehabilitation. We expect to continue our work on allosteric modulation of the GABAA and NMDA receptor systems in the brain. The GABAA and NMDA receptor systems are broadly accepted as impacting many psychiatric and neurological disorders, spanning disorders of mood, seizure, cognition, anxiety, sleep, pain, and movement, among others. We believe that we may have the opportunity to develop molecules from our internal portfolio with the goal of addressing a number of these disorders in the future. We believe that we may also have the opportunity to use our scientific approach to explore targets beyond the GABAA and NMDA receptor systems and to develop compounds in areas of unmet need outside of CNS.

Our Strategy

Our goal is to build a top-tier biopharmaceutical company that is the leader in developing and commercializing brain health therapies. Our current focus is on building on our multi-franchise opportunities in depression, neurology, and neuropsychiatry. Key elements of our strategy are to:

- continue to advance Phase 3 clinical development and regulatory activities with respect to zuranolone in PPD and MDD, and potentially advance zuranolone for other indications as part of our strategic collaboration with Biogen;
- continue our commercialization efforts with respect to ZULRESSO in the treatment of PPD in the U.S., with a primary focus in geographies that have existing, active ZULRESSO treating sites;
- complete the ongoing KINETIC Study in essential tremor, and, if the results support further development, initiate additional development activities including the next placebo-controlled Phase 2 clinical trial with SAGE-324 in essential tremor to explore dose and frequency, including potential formulations, with potential future development in epilepsy, Parkinson's disease, and other neurological conditions, as part of our strategic collaboration with Biogen;
- complete the ongoing Phase 2a open-label PARADIGM Study of patients with Parkinson's disease cognitive dysfunction and Phase 2a open-label LUMINARY Study of patients with Alzheimer's disease mild cognitive impairment and mild dementia, and initiate a planned placebo-controlled Phase 2 clinical trial with the indication and design to be determined based on results of completed and ongoing SAGE-718 clinical trials;

- support our collaboration with Biogen with respect to zuranolone and SAGE-324 in the U.S., and support Biogen's development of zuranolone and SAGE-324 in Biogen's licensed territories outside the U.S. and Shionogi's development of zuranolone in the Existing Partner Territory;
- advance SAGE-689 and SAGE-904 in Phase 1 clinical development, including conducting planned Phase 1 clinical trials;
- continue our research and development efforts to evaluate the potential for our existing product candidates in the treatment of additional indications or in new formulations;
- identify new targets, and generate and test new compounds and product candidates, with a focus on indications where we believe we can make well-informed, rapid go/no-go decisions, with the goal of developing a diversified portfolio of assets with differentiated features;
- prepare and file new drug applications, or NDAs, with the by the U.S. Food and Drug Administration, or FDA, and conduct pre-launch activities with respect to any of our product candidates that have been successfully developed;
- commercialize any product candidates for which we obtain regulatory approval, including the manufacture of commercial supplies;
- at the appropriate time, as our development efforts progress, add personnel, including personnel to support product development and ongoing and future commercialization efforts;
- evaluate the market potential and regulatory pathways for our product candidates beyond zuranolone and SAGE-324 in the European Union, or EU, and other countries outside the U.S., and determine how best to move forward where and when it may make business and strategic sense;
- continue to build, maintain, defend, leverage, and expand our intellectual property portfolio, including by utilizing the strengths of our proprietary chemistry platform and scientific know-how to expand our portfolio of new chemical entities to lessen our long-term reliance on the success of any one program and to facilitate long-term growth; and
- continue to explore opportunities to establish agreements or alliances with other pharmaceutical companies, at the appropriate time, where we believe a collaboration will add significant value to our efforts, including through capabilities, infrastructure, speed or financial contributions, or to acquire new compounds, product candidates or products if we believe such opportunities will help us achieve our goals or meet other strategic objectives.

Understanding the Foundations of Our Approach

The CNS is composed of a vast and complex network of different structures and cell types, most of which serve, directly or indirectly, to provide a means for the nervous system to signal or communicate with other nerve cells to regulate brain function. The cell type responsible for this signaling is called a neuron. One way chemical or electrical signals exert their effects on neurons is by traveling across a physical gap located between two neurons, called a synapse. Presynaptic neurons transmit signals whereas postsynaptic neurons react to the signals. The human brain contains approximately 86 billion neurons, each having hundreds to tens of thousands of synapses to allow for this communication. This process is essential to all things, from organ function, to movement, to memory and all behavioral processes. Neurotransmission is the process by which signaling molecules, called neurotransmitters, are released by a presynaptic neuron, travel over the synaptic space and bind to and interact with receptors on a postsynaptic neuron. Depending on the nature of the neurotransmitter and receptor, this interaction results in excitation, inhibition or modulation of the receiving neuron's behavior.

We are currently focused on developing drugs based on selective allosteric modulation of neurotransmitter receptors in the CNS. Allosteric modulators are a class of small molecules that interact at a site different from the site where neurotransmitters bind, and allow the potential for fine-tuning of neuronal signals. We believe that nowhere in the body is it more important to maintain normal rhythms than in the brain, and accordingly we believe that allosteric modulation approaches are well-suited for the treatment of diseases and disorders of the brain.

We utilize our proprietary chemistry capabilities to design and identify drugs that are allosteric modulators, and that have properties targeted to the indications of interest. Our goal is to select for development compounds that we believe are capable of varying degrees of desired activity rather than complete activation or inhibition of the receptor. Our current focus is on two critical CNS receptor systems: GABA and NMDA. The GABA receptor family, which is recognized as the major inhibitory neurotransmitter in the CNS, mediates downstream neurologic and bodily function in part via activation of GABAA receptors. GABAA receptors play a key role in regulating neuron excitability. The NMDA-type receptors of the glutamate receptor system are a major excitatory receptor system in the CNS. NMDA receptors serve a critical role in CNS-related activities. Dysfunction in these systems is implicated in a broad range of brain disorders.

Our proprietary chemistry platform is centered, as a starting point, on our knowledge of the chemical scaffolds of endogenous neuroactive steroids that are allosteric modulators of GABAA or NMDA receptors. We have leveraged this platform to assemble a chemistry portfolio of greater than 8,000 compounds. We believe our proprietary chemistry platform allows us to:

- control important properties such as half-life, brain penetration and the types of receptors our drugs act upon, thereby modulating either inhibition or excitation either acutely or chronically; and
- create drugs that are designed to exert control over the intensity of receptor activation or deactivation, with the potential to hit targets in the brain with more precision, with the goal of increased tolerability and fewer off-target side effects than current CNS therapies or previous therapies that have failed in development.

We target diseases and disorders of the brain where we believe patient populations are easily identified, clinical endpoints are well-defined, and development pathways are feasible.

Our Product Pipeline

The following table summarizes the status of our product and product candidate portfolio as of the filing date of this Annual Report.

ZULRESSO (Brexanolone) CIV Injection

Our first product, ZULRESSO, is a proprietary IV formulation of brexanolone. Brexanolone is chemically identical to allopregnanolone, a naturally occurring neuroactive steroid that acts as a positive allosteric modulator of GABAA receptors. In March 2019, the FDA approved ZULRESSO for the treatment of PPD in adults. We launched ZULRESSO commercially in the U.S. in June 2019, after completion of controlled substance scheduling of brexanolone by the U.S. Drug Enforcement Administration, or DEA, and incorporation of the scheduling into the FDA-approved label and other product information. The DEA placed ZULRESSO into Schedule IV of the Controlled Substances Act, or CSA. ZULRESSO is administered as a continuous infusion given over two and a half days. Because of the risk of serious harm resulting from excessive sedation or sudden loss of consciousness during the ZULRESSO infusion, ZULRESSO must be administered in a medically-supervised healthcare setting that has been certified under a Risk Evaluation and Mitigation Strategy, or REMS, program and meets the other requirements of the REMS program, including requirements related to monitoring of the patient during the infusion. Patients who are prescribed ZULRESSO are required to enroll in a registry which may allow us to compile additional information to further our understanding of the risk of excessive sedation or sudden loss of consciousness during administration of ZULRESSO and management of the risk. Given the mode and setting of administration of ZULRESSO and the requirements of the REMS program, ZULRESSO has been administered to date primarily to treat women with severe PPD, and we expect that to continue to be the case. We estimate that about 20% to 30% of women diagnosed with PPD fall into this category.

PPD is one of the most common medical complications during and after pregnancy, and is characterized by depressive symptoms that may occur during pregnancy or following childbirth up to 12 months. PPD symptoms may include sadness and depressed mood; anxiety or agitation; loss of interest in daily activities; changes in eating and sleeping habits; feeling overwhelmed; fatigue and decreased energy; inability to concentrate; hypervigilance about the baby or lack of interest in the baby; and feelings of worthlessness, shame or guilt. In the U.S., estimates of new mothers identified with PPD each year vary state-to-state from 9% to 23%, with an overall average of 13.2%. Based on these data,

we estimate that 500,000 or more women in the U.S. each year may experience PPD, and approximately 50% are formally diagnosed. We estimate that 20% to 30% of women diagnosed with PPD will experience severe symptoms. PPD can lead to devastating consequences for a woman and for her family. Suicide is one of the leading causes of maternal death following childbirth.

ZULRESSO is the only pharmacological therapy specifically approved for PPD. The current standard of care for PPD is comprised of psychotherapy and, in women with moderate or severe PPD, the cautious use of pharmacological therapies such as selective serotonin reuptake inhibitors, or SSRIs, and serotonin and norepinephrine reuptake inhibitors, or SNRIs.

Naturally occurring allopregnanolone is found at its highest levels in women during the third trimester of pregnancy, returning to normal levels generally within 24 hours after giving birth. Levels of allopregnanolone have been found to be lower in women with PPD than in healthy women. It may be that women with PPD are particularly sensitive to the rapid decline in allopregnanolone after birth, potentially causing GABAA-system mediated mood disruption. These data led to our interest in evaluating allosteric modulators of the GABAA receptor such as brexanolone and zuranolone in the treatment of PPD.

The approval of ZULRESSO in the U.S. was based on positive results from our HUMMINGBIRD Phase 3 clinical program, which was comprised of two multicenter, randomized, double-blind, parallel-group, placebo-controlled, Phase 3 clinical trials designed to evaluate the safety and effectiveness of brexanolone in women with PPD, with supportive evidence from a Phase 2 clinical trial of brexanolone in PPD. Results from the HUMMINGBIRD Phase 3 clinical program were published in the September 22, 2018 issue of *The Lancet*.

Zuranolone (SAGE-217)

Our next most advanced product candidate is zuranolone (SAGE-217), a novel oral compound that is currently in Phase 3 clinical development in PPD and MDD. Zuranolone is a neuroactive steroid that, like brexanolone, is a positive allosteric modulator of GABAA receptors, targeting both synaptic and extrasynaptic GABAA receptors. We also believe zuranolone has potential in other indications such as treatment resistant depression, bipolar depression and generalized anxiety disorder. We are jointly developing zuranolone in the U.S. with Biogen under the Biogen Collaboration Agreement that became effective in December 2020, and will jointly commercialize zuranolone in the U.S. if our development efforts are successful and it is approved in the U.S. The Biogen Collaboration Agreement covers any products incorporating zuranolone. We have granted Biogen sole rights to develop and commercialize the Licensed 217 Products outside the U.S., other than in the Existing Partner Territory, where we have granted rights to Shionogi. The FDA has granted zuranolone Breakthrough Therapy designation and Fast Track designation in the treatment of MDD.

MDD is a serious mental health disorder commonly characterized by symptoms of depressed mood and/or loss of interest in pleasurable activities causing impairment in daily life. MDD is characterized by a period of depressive symptoms lasting at least two weeks and is associated with changes in affect, cognition, and function. In typical depressive episodes, the person experiences depressed mood, loss of interest and enjoyment, and reduced energy leading to diminished activity for at least two weeks. Many people with depression also suffer from anxiety symptoms and medically unexplained somatic symptoms. A person with moderate or severe MDD will typically have difficulties carrying out his or her usual work, school, domestic or social activities due to symptoms of depression. Antidepressants are widely used in the treatment of MDD, but many patients do not adequately respond to existing treatments. According to estimates, more than 17 million adults in the U.S. reported at least one major depressive episode in 2018. Among U.S. adults reporting at least one major depressive episode in 2018, approximately 11.5 million (67%) had a diagnosis of MDD, 8.7 million were treated in the outpatient setting for depression; and 7 million (80.8% of those treated) received pharmacotherapy. Research conducted during the COVID-19 pandemic reported a three- to four-fold increase in symptoms of depression among adults in the U.S. between April and December of 2020 compared to previous years. Preclinical and clinical evidence suggest the role of GABAA receptor dysfunction in depression. Low GABA and allopregnanolone levels have been found in the brain, cerebrospinal fluid and plasma of depressed patients.

To date, we have completed three placebo-controlled clinical trials evaluating zuranolone 30 mg, two in MDD and one in PPD, the results of which have been previously disclosed. Two of the trials evaluating zuranolone 30 mg – the PPD trial and one of the MDD trials – met their primary endpoints, and the other MDD trial did not meet its primary endpoint. Following discussions with the FDA, we determined to conduct three new Phase 3 clinical trials as part of our pivotal program for zuranolone in MDD and PPD:

- a placebo-controlled trial evaluating a two-week course of zuranolone 50 mg in patients with MDD, with additional short-term follow-up, known as the WATERFALL Study;
- a placebo-controlled trial evaluating a two-week course of zuranolone 50 mg in women with PPD, with additional short-term follow-up, known as the SKYLARK Study; and
- a placebo-controlled trial evaluating a two-week course of zuranolone 50 mg, when co-initiated with a newly administered standard antidepressant therapy, as an acute rapid response treatment in patients with MDD, with additional short-term follow-up, known as the CORAL Study.

We initiated patient dosing in the WATERFALL Study and the SKYLARK Study in the second quarter of 2020 and initiated patient dosing in the CORAL Study in the fourth quarter of 2020. Topline results from the WATERFALL Study are expected in the first half of 2021, and topline results from the CORAL Study and SKYLARK Study are expected in late 2021.

We are also conducting an open-label Phase 3 clinical trial, known as the SHORELINE Study, evaluating the safety of as-needed repeat treatment with zuranolone in which patients with MDD receive an initial two-week course of zuranolone and responders from the first cycle are followed for up to one year and eligible to receive as-needed retreatment during the follow-up period. The need for repeated dosing is assessed every 14 days based on the results of a patient-reported Patient Health Questionnaire-9 score (≥10) and 17-item Hamilton Rating Scale for Depression (HAMD-17) assessment (≥20). The protocol of the clinical trial requires a minimum of 56 days between zuranolone 14-day courses, to allow for a maximum of five treatments during the follow-up period. Enrollment of patients receiving the 30 mg dose in the SHORELINE Study was completed in the third quarter of 2019. In May 2020, we amended the SHORELINE protocol to allow currently enrolled patients to receive retreatment with zuranolone 50 mg. Additionally, in the second quarter of 2020, we began enrolling a new cohort of patients with MDD in the SHORELINE Study who receive zuranolone 50 mg from the outset of their enrollment in the trial.

In October 2020, we reported interim topline results from a July 2020 data cut of the ongoing SHORELINE Study. For the primary endpoint of safety and tolerability, the analyzed data showed that zuranolone was generally well-tolerated in the 30 mg dose and among the initial patients treated with the 50 mg dose. Adverse events reported in the trial during the period analyzed were generally consistent with results seen in previous clinical trials of zuranolone, with the most common adverse events in the 30 mg cohort (observed in > 5% of subjects) including somnolence, headache and dizziness. The overall incidence of adverse events declined in subsequent treatment courses of zuranolone 30 mg. Adverse events >5% of somnolence, dizziness, sedation, headache and tremor were observed to be more frequent in the 50 mg cohort, but were similar in severity to the adverse events seen with patients receiving 30 mg doses. Most adverse events were mild or moderate. An increase in level of intensity of somnolence and sedation was also noted at the 50 mg dose in patients who had previously received a 30 mg dose. At the time of the data cut analysis, patients with a clinical response (decrease in HAMD-17 baseline score of ≥50%) at the end of the initial 14-day course of zuranolone 30 mg used a mean number of 1.9 treatments per year. We plan to report comprehensive data from patients receiving the 30 mg dose in mid-2021 and topline data from patients receiving the 50 mg dose in late 2021.

Shionogi has completed a Phase 1 clinical trial in Japan to evaluate the safety and tolerability of zuranolone in Japanese and Caucasian subjects. In July 2020, Shionogi initiated a Phase 2 clinical trial with zuranolone in Japanese patients with MDD.

We may consider additional development opportunities for zuranolone as part of the Biogen collaboration.

SAGE-324

After zuranolone, our next most advanced development candidate is SAGE-324. SAGE-324 is a novel GABAA receptor positive allosteric modulator intended for chronic oral dosing. We are currently conducting a placebo-controlled Phase 2 clinical trial evaluating the safety and efficacy of SAGE-324 in the treatment of essential tremor, known as the KINETIC Study.

Essential tremor is a neurodegenerative condition characterized by rhythmic trembling most commonly of the upper limbs, including the hands; the head, voice, legs or trunk may also be affected. Symptoms generally evolve over time, are persistent, and affect patients' ability to function independently. Essential tremor is the most common movement disorder, estimated to affect more than 6 million adults in the U.S., with increasing prevalence among patients 50 years and older. First-line treatments for essential tremor include β-adrenergic blocker propranolol and anticonvulsant primidone.

We expect to report topline data from the KINETIC Study in early 2021. If the results of the KINETIC Study support further development, we expect to initiate additional development activities including the next placebo-controlled Phase 2 clinical trial of SAGE-324 in essential tremor in late 2021 to explore dose and frequency, including potential formulations. We believe SAGE-324 also has potential for the treatment of a number of other neurological conditions, including epilepsy and Parkinson's disease.

We are jointly developing SAGE-324 in the U.S. with Biogen, and will jointly commercialize Licensed 324 Products with Biogen in the U.S. if our development efforts are successful and it is approved in the U.S. We have granted Biogen sole rights to develop and commercialize SAGE-324 outside the U.S. We may consider additional development opportunities for SAGE-324 as part of our collaboration with Biogen.

SAGE-718

Our second area of focus is the development of novel compounds that target the NMDA receptor. The first product candidate selected for development from this program is SAGE-718, an oxysterol-based positive allosteric modulator of the NMDA receptor, which we are exploring in certain cognition-related disorders associated with NMDA receptor dysfunction, including cognition dysfunction associated with diseases such as Huntington's disease, Parkinson's disease and Alzheimer's disease. Examples of indications involving NMDA receptor dysfunction also include certain types, aspects or subpopulations of a number of diseases such as depression, Alzheimer's disease, attention deficit hyperactivity disorder, schizophrenia, and neuropathic pain. Based on signals observed in measures of executive function relevant to core cognitive decline in a Phase 1 clinical trial of patients with early Huntington's disease and in similar measures during an earlier Phase 1 cohort of healthy volunteers without Huntington's disease, we initiated patient dosing in September 2020 in a Phase 2a open-label clinical trial of SAGE-718 evaluating patients with Parkinson's disease cognitive dysfunction, known as the PARADIGM Study, and commenced dosing in a Phase 2a open-label clinical trial of SAGE-718 in patients with Alzheimer's disease mild cognitive impairment and mild dementia, known as the LUMINARY Study, in early 2021. We expect to report topline data from the PARADIGM Study in early 2021 and topline data from the LUMINARY Study in late 2021. We plan to initiate further development activities including a placebo-controlled Phase 2 clinical trial with SAGE-718 in late 2021 with the indication and design to be informed by the results of the previous and ongoing clinical trials.

Further Exploration of GABAA and NMDA Receptors and New Areas of Interest

We expect to continue to focus our research and development efforts on allosteric modulation of the GABAA and NMDA receptor systems in the brain. Our second product candidate targeting the NMDA receptor, SAGE-904, is in development as a potential oral therapy for disorders associated with NMDA hypofunction. We initiated a Phase 1 clinical trial of SAGE-904 in healthy volunteers in the third quarter of 2019 and expect to complete single ascending dose and multiple ascending dose Phase 1 clinical trials of SAGE-904 in 2021. Our portfolio of novel GABAA receptor positive allosteric modulators includes SAGE-689, a product candidate intended for intramuscular administration, for which we have completed the non-clinical studies required to move into a Phase 1 clinical development program. We expect to initiate and complete a single ascending dose Phase 1 clinical trial of SAGE-689 in 2021. We also have other compounds

at earlier stages of development with a focus on both acute and chronic brain health disorders, including SAGE-319, an extrasynaptic GABAA receptor-preferring positive allosteric modulator that we plan to study for potential use as an oral therapy in treating disorders of social interaction, and SAGE-421, an NMDA receptor positive allosteric modulator that we plan to study for potential use in neurodevelopmental disorders and cognitive recovery and rehabilitation. The GABAA and NMDA receptor systems are broadly accepted as impacting many psychiatric and neurological disorders, spanning disorders of mood, seizure, cognition, anxiety, sleep, pain, and movement among others. We believe that we may have opportunities to develop molecules from our internal portfolio to address a number of these disorders in the future. Our ability to identify and develop such novel brain health therapies is enabled by our proprietary chemistry platform that is centered, as a starting point, on knowledge of the chemical scaffolds of certain endogenous neuroactive steroid compounds. We believe our knowledge of the chemistry and activity of allosteric modulators allows us to efficiently design molecules with different characteristics. This diversity enables us to regulate important properties such as half-life, brain penetration and receptor pharmacology to develop product candidates that have the potential for better selectivity, increased tolerability, and fewer off-target side effects than either current therapies or previous therapies which have failed in development. We believe that we may also have the opportunity to use our scientific approach to explore targets beyond the GABAA and NMDA receptor systems and to develop compounds in areas of unmet need outside of brain health disorders.

We believe our broad potential pipeline lessens our reliance on the success of any one program. We believe our ability to design and develop novel molecules with distinct profiles and receptor subtype selectivity may also provide us with the option, if we choose, to potentially partner certain assets with third parties who possess the development and commercialization capabilities to pursue these programs, like our recent strategic collaboration with Biogen. We may also evaluate opportunities to acquire new compounds, product candidates or products from other companies or from academic institutions if we believe such opportunities will help us achieve our goals or meet other strategic objectives.

Manufacturing and Supply

We neither own nor operate, and currently have no plans to own or operate, any manufacturing facilities. We currently source all of our clinical and non-clinical material supply through third party contract manufacturing organizations, or CMOs. We have also sourced our existing inventory of our proprietary formulation of ZULRESSO for commercial sale from CMOs, and intend to source all of our future commercial supplies of ZULRESSO from CMOs.

We have long-term supply agreements with our CMOs with respect to ZULRESSO drug substance and drug product. We have an inventory of ZULRESSO drug substance and drug product in place to help mitigate any potential supply risks. All commercial supplies are intended to be manufactured applying current Good Manufacturing Practices, or cGMP.

We have established relationships with several CMOs under which the CMOs manufacture clinical and non-clinical supplies of drug substance and drug product for zuranolone, SAGE-324, SAGE-718 and other product candidates on a purchase order basis under master service and quality agreements. All clinical supplies of drug substance and drug product are intended to be manufactured under cGMP. Starting materials and key intermediates to support the production of these product candidates are manufactured by other CMOs. We do not currently have arrangements in place for either long-term supply or redundant supply of drug substance or drug product for zuranolone, SAGE-324, or SAGE-718. We intend to put a long-term supply agreement in place at the appropriate time for drug substance and drug product for each product candidate, if development continues. We plan to mitigate potential commercial supply risks for any products that are approved in the future through inventory management and through exploring additional manufacturers to provide drug substance or drug product.

We continue to refine and scale up the manufacturing process for zuranolone to prepare for potential commercialization of zuranolone, if an NDA is submitted and approved. We also intend to improve the manufacturing process for our other product candidates and manufacture clinical supplies as development progresses. We believe we currently have sufficient zuranolone drug substance on hand for our ongoing Phase 3 clinical trials.

ZULRESSO, zuranolone, SAGE-324 and SAGE-718 are small molecules isolated as stable crystalline solids. We believe the syntheses of ZULRESSO, zuranolone, SAGE-324 and SAGE-718 are reliable and reproducible from readily available starting materials, and the synthetic routes are amenable to large-scale manufacturing and do not require unusual equipment in the manufacturing process. We expect to continue to identify and develop drug candidates that are amenable to cost-effective manufacturing at contract manufacturing facilities.

Sales and Marketing

Our first product, ZULRESSO, was made commercially available in the U.S. as a treatment for PPD in adults in June 2019. Our revenue from sales of ZULRESSO has been negatively impacted by significant barriers arising from the complex requirements for treatment and, more recently, by the COVID-19 pandemic, and these factors are expected to continue to impact revenues negatively in the future. ZULRESSO is administered as a continuous infusion given over two and a half days. Because of the risk of serious harm resulting from excessive sedation or sudden loss of consciousness during the ZULRESSO infusion, ZULRESSO is approved for administration only in a medically-supervised healthcare setting that has been certified under a REMS program and meets the other requirements of the REMS program, including requirements related to monitoring of the patient during the infusion. The actions required for a healthcare setting to be ready and willing to treat women with PPD are complex and time-consuming. These actions include becoming REMS-certified; achieving formulary approvals; establishing protocols for administering ZULRESSO; and securing satisfactory reimbursement. Sites must often negotiate reimbursement on a payor-by-payor basis under commercial coverage. The availability, terms and timing of coverage for ZULRESSO vary from payor to payor, both for commercially insured patients and from state Medicaid systems, and we have encountered some states that impose significant coverage restrictions or lengthy delays on reimbursement of ZULRESSO. As a result, certain healthcare settings will not treat Medicaid patients with ZULRESSO even if they are active sites of care for ZULRESSO. These requirements have created significant barriers to treatment for women with PPD. We expect these barriers will continue to negatively impact ZULRESSO revenue growth.

These barriers have been compounded by the COVID-19 pandemic. The spread of COVID-19 in the U.S. has resulted in a significant number of sites of care pausing treatment of new patients with ZULRESSO and potential new sites pausing site activation activities. We believe concerns about exposure to the virus have also caused a significant reduction in the number of women with PPD seeking treatment with ZULRESSO and in physicians willing to prescribe it. Given the continuing concerns about the COVID-19 pandemic across the country, we expect the significant adverse impact of the pandemic on ZULRESSO revenues to continue. Specifically, we anticipate that the COVID-19 pandemic will continue to have an adverse impact on our results of operations from sales of ZULRESSO as pandemic-related restrictions are expected to continue to be in effect for the foreseeable future. The scope and timing of the expected negative impact of the COVID-19 pandemic will depend on, among other factors, the duration and severity of precautionary measures taken to curb the spread of COVID-19, the length, location and frequency of surges or waves of COVID-19 cases and the timing and success of the roll-out of vaccines for COVID-19 and any return to normal business operations across the U.S. Given the continued fluidity of the COVID-19 pandemic, we cannot predict its course or for how long and to what extent it will have an adverse impact on ZULRESSO sales.

In April 2020, we implemented a workforce reduction that primarily affected the ZULRESSO commercial operation and related support functions, including eliminating the entirety of our salesforce at that time. While we remain committed to working with healthcare providers and women with PPD seeking access to ZULRESSO and plan to continue to evaluate opportunities to raise awareness and help reduce hurdles to appropriate treatment, our ongoing commercial efforts, including our small account management field-based team and a small number of sales representatives, are primarily focused on geographies that have existing, active ZULRESSO treating sites. We expect that this approach to our commercial efforts may continue to substantially limit the revenue opportunity for ZULRESSO. Given the shift in focus of our commercial efforts and the continued impact of the COVID-19 pandemic, the number of new healthcare settings that become treating sites for ZULRESSO may be very limited for the foreseeable future. We may also find that certain healthcare settings that have in the past been active treating sites may not be willing to remain infusion-ready as a result of the complex requirements related to administration of ZULRESSO and compliance with the REMS, related

limitations and restrictions, or because of actual or perceived difficulties obtaining satisfactory reimbursement or limitations on reimbursement or for other reasons. Healthcare settings that are active sites may also limit capacity used for ZULRESSO infusions or continue to wait to gain more experience with the clinical profile of ZULRESSO and to secure direct experience with reimbursement prior to increasing patient intake. Sage Central, our patient support center located in Raleigh, North Carolina, continues to provide a range of patient support resources to assist women with PPD and their families in the ZULRESSO treatment journey. In addition, our commercialization infrastructure includes capabilities in medical affairs, manufacturing, quality control, and compliance.

We expect that we will need additional sales and marketing capabilities in the U.S. if zuranolone, SAGE-324 or any of our other current or future product candidates are successfully developed and approved. Our resource needs in those areas may be substantial if the approved product is primarily prescribed by primary care healthcare professionals as is the case, for example, with respect to the treatment of MDD, or as the result of other needs specific to the product. As described above, we and Biogen have agreed as part of our collaboration that, if zuranolone and SAGE-324 are successfully developed and approved, we will jointly commercialize the products in the U.S., including sharing equally in sales and marketing activities and profits and losses in the U.S. If we obtain regulatory approval of such products, Biogen will book sales of Licensed 217 Products and we will book sales of Licensed 324 Products. We have granted Biogen sole rights to commercialize the Licensed Products outside the U.S., other than in the Existing Partner Territory with respect to zuranolone, where we have granted such rights to Shionogi.

Licenses

We have entered into several license agreements with respect to our product and clinical-stage product candidates, which are described below.

CyDex Pharmaceuticals

In September 2015, we amended and restated our existing commercial license agreement with CyDex Pharmaceuticals, Inc., or CyDex. Under the terms of the commercial license agreement, as amended and restated, CyDex has granted us an exclusive license to CyDex's Captisol drug formulation technology and related intellectual property for the manufacture of pharmaceutical products incorporating brexanolone or SAGE-689, and the development and commercialization of the resulting products in the treatment, prevention or diagnosis of any disease or symptom in humans or animals other than (i) the ocular treatment of any disease or condition with a formulation, including a hormone; (ii) topical ocular treatment of inflammatory conditions; (iii) treatment and prophylaxis of fungal infections in humans; and (iv) any ocular treatment for retinal degeneration.

Pursuant to the CyDex license, we are required during the term of the agreement to use commercially reasonable efforts to continue active, diligent development of the licensed product, to seek regulatory approval of the licensed product and to commercialize the licensed product following regulatory approval. We must deliver periodic progress reports to CyDex.

We are obligated to make milestone payments under the amended and restated license agreement with CyDex based on the achievement of clinical development and regulatory milestones in the amount of up to $0.8 million in clinical milestones and up to $3.8 million in regulatory milestones for each of the first two fields with respect to brexanolone; up to $1.3 million in clinical milestones and up to $8.5 million in regulatory milestones for each of the third and fourth fields with respect to brexanolone; and up to $0.8 million in clinical milestones and up to $1.8 million in regulatory milestones for one field with respect to SAGE-689. The CyDex license is perpetual until terminated. We may terminate the CyDex agreement for convenience upon providing 180 days' prior written notice to CyDex. Either party has the right to terminate the agreement for failure to cure a material breach in the applicable cure period. We pay royalties to CyDex on sales of

ZULRESSO, and will also be required to pay royalties on sales of SAGE-689, if successfully developed, in the low single digits based on levels of net sales.

We are also party to a supply agreement with CyDex. Under the supply agreement, we are required to purchase all of our requirements for Captisol with respect to brexanolone and SAGE-689 from CyDex, and CyDex is required to supply us with Captisol for such purposes, subject to certain limitations.

University of California

In October 2013, we entered into a license agreement with The Regents of the University of California, or the Regents, which was amended in May 2014. Pursuant to this agreement, and subject to certain rights of the U.S. government and rights retained by the Regents, the Regents granted us a non-exclusive, non-transferable license under all personal property rights of the Regents covering the tangible personal property in an investigational new drug, or IND, application package owned by the Regents, or the Data, and a specified quantity of cGMP grade allopregnanolone, or the Material, to (i) use the Data for reference or incorporation in an IND for the use of the Material as a treatment of status epilepticus, or SE, essential tremor and/or PPD and (ii) use the Material or modifications of the Material to develop a pharmaceutical formulation for clinical trials for SE, essential tremor and/or PPD. The rights licensed to us are not sublicenseable.

Pursuant to this agreement, we are required to use commercially reasonable efforts to proceed with the development, manufacture and sale of one or more products containing allopregnanolone, a derived product under the agreement, for the treatment of SE, essential tremor and/or PPD. We are required to deliver written reports to the Regents describing our progress no later than 60 days subsequent to June 30 and December 31 of each fiscal year.

This agreement required us to make up to $0.1 million in milestone payments in connection with the first derived product that met the relevant milestones, all of which we have already paid. We must also pay royalties of less than 1% to the Regents on ZULRESSO and for each other derived product, if any, for a period of 15 years following the first commercial sale of such derived product. This agreement will terminate on the earlier to occur of (i) 27 years after the effective date or (ii) 15 years after the last-derived product is first commercially sold. We may terminate this agreement early for convenience upon providing 60 days' prior written notice to the Regents. The Regents may terminate this agreement early in the event of material default, including failure to provide timely progress reports, after the applicable cure period, or in the event of our bankruptcy. In the event of early termination of this agreement, we have the right to sell any partially made derived products for a period of 120 days from the date of termination, but would not otherwise have rights after termination under the licensed rights to make, have made, use, sell, have sold, offer for sale or import products containing allopregnanolone.

In June 2015, we entered into an exclusive license agreement with the Regents whereby we were granted an exclusive license to certain patent rights related to the use of allopregnanolone to treat various diseases. In exchange for such license, we paid an upfront payment of $50,000, and made annual maintenance fees of $15,000 until the calendar year following the first sale of ZULRESSO. We are obligated to make milestone payments following the achievement of specified regulatory and sales milestones of up to $0.7 million and $2.0 million in the aggregate, respectively. We pay royalties to the Regents at a low single digit percentage of net sales of ZULRESSO, subject to specified minimum annual royalty amounts. Unless terminated by operation of law or by acts of the parties under the terms of the agreement, the license agreement will terminate when the last-to-expire patents or last-to-be abandoned patent applications expire, whichever is later.

Collaboration and License Agreement with Biogen

On November 27, 2020, we entered into the Biogen Collaboration Agreement with Biogen for the development, manufacture and commercialization of Licensed 217 Products and Licensed 324 Products. The Biogen Collaboration Agreement became effective on December 28, 2020, upon the receipt of clearance under the Hart-Scott-Rodino Antitrust Improvements Act of 1976.

We and Biogen have agreed that we will jointly develop and commercialize the Licensed Products in the U.S., and that Biogen solely will develop and commercialize the Licensed Products outside the U.S., except, with respect to the Licensed 217 Products, in the Existing Partner Territory. Each of we and Biogen is obligated to use commercially reasonable efforts to develop at least one product in each Product Class in the U.S., and Biogen is also obligated to use commercially reasonable efforts to develop at least one product in each Product Class in the Biogen Territory. We and Biogen have agreed to share jointly in the performance of the activities under the Biogen Collaboration Agreement in the U.S. and to share all costs for activities under the Biogen Collaboration Agreement solely for the U.S. equally. The Biogen Collaboration Agreement provides that Biogen has sole responsibility and decision-making authority with respect to such activities in the Biogen Territory. Biogen is solely responsible for all costs for activities under the Biogen Collaboration Agreement in the Biogen Territory. We have an Opt-Out Right (as defined below) in the U.S. with respect to a Product Class.

We have granted to Biogen a non-transferable, sublicensable, except for certain specified exceptions, license to certain of our intellectual property as needed to perform the activities under the Biogen Collaboration Agreement. Such license is co-exclusive with us in the U.S. and exclusive, even as to us, in the Biogen Territory, subject to certain retained rights to allow us to exercise our rights and perform our obligations under the Agreement and with respect to the Existing Partner Territory.

Our activities for the U.S. will be conducted pursuant to joint development plans agreed to by us and Biogen, on a Licensed Product-by-Licensed Product basis, and overseen by a joint steering committee, or the JSC. The JSC shall be composed of an equal number of representatives from each of us and Biogen.

Under the terms of the Biogen Collaboration Agreement, Biogen paid us an upfront payment of $875.0 million on December 31, 2020. For so long as a Licensed Product is being sold in the U.S., we and Biogen will share in all operating profits and losses arising from such Licensed Product (50 percent us and 50 percent Biogen). The Biogen Collaboration Agreement provides that Biogen will book sales of Licensed 217 Products globally. We will book sales of Licensed 324 Products in the U.S. and Biogen will book sales of Licensed 324 Products outside of the U.S., in each case if Licensed Products are successfully developed and approved. We have the right to opt out of such profit- and loss-sharing on a Product Class-by-Product Class basis in the U.S., or in each case, an Opt-Out Right. If we elect to exercise our Opt-Out Right with respect to a Product Class, we have agreed to transition to Biogen applicable development and commercial activities for such Product Class for the U.S., and Biogen has agreed to assume sole operational and financial responsibility for such activities.

The Biogen Collaboration Agreement provides for aggregate regulatory/commercial milestone payments from Biogen to us for (i) Licensed 217 Products of up to $475.0 million and (ii) Licensed 324 Products of up to $520.0 million. It also provides for aggregate one-time sales milestone payments from Biogen to us of (i) up to $300.0 million for each Product Class if we have not exercised our Opt-Out Right with respect to such Product Class and (ii) up to $525.0 million for each Product Class if we have exercised our Opt-Out Right with respect to such Product Class.

Biogen has also agreed to pay us tiered royalties based on net sales of the Licensed Products in the Biogen Territory of high-teens to low-twenties percentages. If we have exercised our Opt-Out Right in the U.S. with respect to a Product Class, Biogen has agreed to pay us specified royalties based on net sales of the Licensed Products of such Product Class. Royalty payments may be reduced in certain specified customary circumstances.

During the term of the Biogen Collaboration Agreement, neither us nor Biogen nor any of our respective affiliates is permitted outside of the Biogen Collaboration Agreement to directly or indirectly develop, manufacture, conduct medical affairs activities or commercialize certain products in specified indications, or enter into agreements or arrangements with third parties to perform any of the above activities.

Unless earlier terminated, the Biogen Collaboration Agreement expires on a Licensed Product-by-Licensed Product and country-by-country basis on the later of (i) in the Biogen Territory, the expiration of the royalty term for such Licensed Product in such country or (ii) in the U.S., until the parties agree to permanently stop commercializing such Licensed Product. Biogen may terminate the Biogen Collaboration Agreement for convenience in its entirety or on a Product Class-by-Product Class basis or as to a region by providing advance written notice. Either us or Biogen may terminate the Biogen Collaboration Agreement (i) in the event of a material breach in whole or in part, by the other party subject to a cure period and (ii) in the event of the insolvency of the other party, in each case subject to specified conditions.

In connection with the execution of the Biogen Collaboration Agreement, we and BIMA also entered into a stock purchase agreement, or the Biogen Stock Purchase Agreement, for the sale and issuance of 6,241,473 shares of our common stock, or the Biogen Shares, to BIMA at a price of $104.14 per share, a premium of 40% over the volume-weighted average share price for the 30 days ending on the day prior to entry into the Biogen Stock Purchase Agreement, for an aggregate purchase price of $650.0 million. The sale of the Biogen Shares was consummated on December 31, 2020.

We have granted BIMA specified demand and piggyback registration rights with respect to the Biogen Shares. The Biogen Stock Purchase Agreement also includes standstill provisions, lock-up restrictions and a voting agreement with respect to the Biogen Shares. Pursuant to the terms of the Biogen Stock Purchase Agreement, BIMA has agreed not to, and to cause its affiliates not to, directly or indirectly acquire our securities, seek or propose a tender or exchange offer or merger between us and BIMA, solicit proxies or consents with respect to any matter, or undertake other specified actions, in each case subject to specified conditions. The standstill restrictions terminate on the earliest of (i) a specified regulatory milestone under the Biogen Collaboration Agreement, (ii) the date one year following the termination of the Biogen Collaboration Agreement and (iii) December 28, 2027.

BIMA has also agreed not to, and to cause its affiliates not to, sell or transfer any of the Biogen Shares for a period of eighteen months and to limit sales and transfers of the Shares for an additional eighteen month period, in each case subject to specified conditions and exceptions.

Collaboration Agreement with Shionogi & Co., Ltd.

In June 2018, we entered into a collaboration agreement with Shionogi. Pursuant to this agreement, Shionogi will be responsible for all clinical development, regulatory filings and commercialization of products containing zuranolone for the treatment of MDD and potentially other indications in the Existing Partner Territory. Shionogi made an upfront payment of $90.0 million in 2018, and we will be eligible to receive additional payments of up to $485.0 million if certain regulatory and commercial milestones are achieved by Shionogi.

Under the terms of the agreement, the potential future milestone payments include up to $70.0 million for the achievement of specified regulatory milestones, up to $30.0 million for the achievement of specified commercialization milestones, and up to $385.0 million for the achievement of specified net sales milestones. We will receive tiered royalties on sales of zuranolone in the Existing Partner Territory, if development efforts are successful, with tiers averaging in the low to mid-twenty percent range, subject to other terms of the agreement. Due to the uncertainty of pharmaceutical development and the high historical failure rates generally associated with drug development, we may not receive any additional milestone payments or any royalty payments from Shionogi.

Shionogi has also granted us certain rights to co-promote zuranolone in Japan. As between us and Shionogi, we maintain exclusive rights to develop and commercialize zuranolone outside of the Existing Partner Territory. The upfront cash payment and any payments for milestones and royalties are non-refundable and non-creditable.

The agreement with Shionogi will terminate on a licensed product-by-licensed product basis on the date on which the royalty term has expired in each country in Shionogi's territory for such licensed product and will ultimately expire upon the expiration of the last-to-expire royalty term. Shionogi may remove South Korea or Taiwan from the covered territories, for any reason or no reason upon 180 days' prior written notice. Shionogi may terminate the agreement in its entirety for any reason or no reason upon 180 days' prior written notice. Shionogi may also terminate the agreement in the event of a serious adverse event or a clinical failure upon 60 days' written notice to us. Either party may terminate this agreement early in the event of an uncured material breach within 180 days' after notice is delivered to the other party.

Washington University

In November 2013, we entered into a license agreement with Washington University. Under this agreement, and subject to certain rights of the U.S. government and rights retained by Washington University, Washington University granted to us an exclusive, worldwide license under certain patent rights to make, have made, sell, and offer for sale, use and import products covered by certain of its patent rights. Washington University's rights in patent applications disclosing and claiming SAGE-689 are included in this license agreement. Under this agreement, Washington University also granted us non-exclusive license under certain technical information and tangible research information to use such technical information and/or tangible research information to make, have made, sell, offer for sale, use and import products that embody or were made using a method or process covered in the technical information and/or tangible research information. The Washington University license also grants us a right to sublicense our licensed rights to third parties, provided each sublicensee enters into a written agreement with us with terms consistent with our agreement with Washington University. We must pay to Washington University a percentage of the revenue we receive from sublicensing our rights under this agreement, initially in the mid-teens and decreasing to the mid-single digits over time.

Pursuant to the Washington University license, we are required to use commercially reasonable efforts to continue active, diligent development of licensed products and to use commercially reasonable efforts to manufacture, promote and sell licensed products throughout the territory and in the field during the term of the agreement. We must deliver written reports to Washington University describing our progress no later than January 31 of each calendar year.

We must pay to Washington University an annual maintenance fee until and including the year in which our first Phase 2 clinical trial is initiated, and we must make up to $0.7 million and $0.5 million in clinical development and regulatory milestones, respectively, to Washington University, for each licensed product, upon reaching certain milestones relating to the clinical development of our product candidates. The license agreement also requires us to make low single-digit royalty payments to Washington University in connection with the sales of licensed products if successfully developed and approved.

The Washington University agreement will expire on a licensed product-by-licensed product basis upon the later of (i) the last day that at least one valid patent claim covering the licensed product exists, or (ii) the tenth anniversary of the day of the first commercial sale of the licensed product. We may terminate the Washington University agreement early for convenience upon providing Washington University with 90 days' written notice. Washington University may terminate this agreement early in the event of our failure to cure a material breach within the applicable cure period or our

bankruptcy. In the event of early termination of this agreement before the expiration of the last to expire of the patent rights, we must immediately discontinue manufacture, sale and distribution of any licensed products.

Intellectual Property

We strive to protect the proprietary know-how and technology that we believe is important to our business, including seeking and maintaining patents intended to cover our product candidates and compositions, their methods of use and processes for their manufacture, and any other aspects of inventions that are commercially important to the development of our business. We may also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. To protect our rights to our proprietary know-how and technology, we require all employees, as well as our consultants and contract research organization, or CROs, when feasible, to enter into agreements that generally require disclosure and assignment to us of ideas, developments, discoveries and inventions made by these employees, consultants, and CROs in the course of their service to us.

We plan to continue to expand our intellectual property estate by filing patent applications directed to compositions, methods of use, treatment and patient selection, formulations and manufacturing processes created or identified from our ongoing development of our product candidates. Our success will depend 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 and enforceable patents and proprietary rights of third parties. We also rely on know-how, continuing technological innovation and in-licensing opportunities to develop and maintain our proprietary position. We seek to obtain domestic and international patent protection, and endeavor to promptly file patent applications for new commercially valuable inventions.

The patent positions of biopharmaceutical companies like us are generally uncertain and involve complex legal, scientific and factual questions. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and patent scope can be reinterpreted by the courts after issuance. Moreover, many jurisdictions, including the U.S., permit third parties to challenge issued patents in administrative proceedings, which may result in further narrowing or even cancellation of patent claims. We cannot predict whether the patent applications we are currently pursuing, or may in the future pursue, will issue as patents in any particular jurisdiction or whether the claims of any issued patents will be enforceable or provide sufficient protection from competitors.

Because patent applications in the U.S. and certain other jurisdictions are maintained in secrecy for 18 months or potentially even longer, and since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain of the priority of inventions covered by our issued patents, our pending patent applications or of patent applications we may file in the future. Moreover, we may have to participate in interference proceedings or derivation proceedings declared by the U.S. Patent and Trademark Office, or U.S. PTO, or similar proceedings outside the U.S., to determine priority of invention.

Patents

We hold issued patents and pending patent applications in the U.S., and in certain foreign countries. Our intellectual property holdings include, but are not limited to:

- One issued U.S. patent, exclusively licensed to us, covering a method of using our proprietary brexanolone formulation to treat PPD, which will expire in 2033, and one U.S. issued patent and one granted patent in Europe covering our proprietary formulation of brexanolone;
- Pending U.S. and foreign patent applications covering certain aspects of brexanolone, including courses of treatment, dosage regimens, methods for manufacturing, and additional uses of the formulation of brexanolone to treat various brain health diseases and disorders, including PPD;

- One issued U.S. patent covering the composition of matter of zuranolone, two issued U.S. patents covering methods of using zuranolone, and one granted European patent covering the composition of matter of zuranolone, each of which expires in April 2034, subject to any potential extensions; and pending U.S. and foreign patent applications covering zuranolone, uses of zuranolone to treat various brain health diseases and disorders, and solid forms of zuranolone;
- U.S. and foreign patent applications covering SAGE-324, SAGE-319, and many other modulators of the GABAA receptor and uses of these compounds to treat various brain health diseases and disorders;
- Two issued U.S. patents covering composition of matter and method of use of SAGE-689 which expire in December 2033, and U.S. and foreign patent applications covering SAGE-689 and uses of SAGE-689 to treat various brain health diseases and disorders. These patents and patent applications are co-owned with Washington University, and Sage has an exclusive license to Washington University's rights in these patents and patent applications; and
- U.S. and foreign patents and patent applications covering SAGE-718 and many other modulators of the NMDA receptor, and uses of these compounds to treat various brain health diseases and disorders.

Patent Term

The base term of a U.S. patent is 20 years from the filing date of the earliest-filed non-provisional patent application from which the patent claims priority. The term of a U.S. patent can be lengthened by patent term adjustment, which compensates the owner of the patent for administrative delays at the U.S. PTO. In some cases, the term of a U.S. patent is shortened by terminal disclaimer that reduces its term to that of an earlier-expiring patent.

The term of a U.S. patent may also be eligible for patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Act, to account for at least some of the time the drug is under development and regulatory review after the patent is granted. With regard to a drug for which FDA approval is the first permitted marketing of the active ingredient, the Hatch-Waxman Act allows for extension of the term of one U.S. patent that includes at least one claim covering the composition of matter of an FDA-approved drug, an FDA-approved method of treatment using the drug, and/or a method of manufacturing the FDA-approved drug. The extended patent term cannot exceed the shorter of five years beyond the non-extended expiration of the patent or 14 years from the date of the FDA approval of the drug. Some foreign jurisdictions, including Europe and Japan, also have patent term extension provisions, which allow for extension of the term of a patent that covers a drug approved by the applicable foreign regulatory agency. In the future, if and when our pharmaceutical products receive FDA approval, we expect to apply for patent term extension on patents covering those products, their methods of use, and/or methods of manufacture.

Trade Secrets

In addition to patents, we may rely on trade secrets and know-how to develop and maintain our competitive position. Companies typically rely on trade secrets to protect aspects of their business that are not amenable to, or that they do not consider appropriate for, patent protection. We protect trade secrets, if any, and know-how by establishing confidentiality agreements and invention assignment agreements with our employees, and, where feasible, with consultants, scientific advisors, contractors and certain other entities with whom we do business. These agreements generally provide that all confidential information developed or made known during the course of an individual or entity's relationship with us must be kept confidential during and after the relationship. These agreements also generally provide that all relevant inventions resulting from work performed for us or relating to our business and conceived or completed during the period of employment or assignment, as applicable, shall be our exclusive property. In addition, we take other appropriate precautions, such as physical and technological security measures, designed to guard against misappropriation of our proprietary information by third parties.

Competition

The biopharmaceuticals industry is highly competitive. There are many public and private companies, universities, governmental agencies and other research organizations actively engaged in the research and development of products that may be similar to our product candidates or address similar markets. It is probable that the number of companies seeking to develop products and therapies similar to our products will increase.

Currently, there are no pharmacological therapies specifically approved for the treatment of PPD other than ZULRESSO. The current standard of care for PPD commonly consists of psychotherapy; however, patients with moderate or severe PPD are often prescribed antidepressant medications such as SSRIs and SNRIs.

Our most advanced development candidate, zuranolone, is in Phase 3 development for MDD and PPD. Patients with MDD are typically treated with a variety of antidepressant medications, including SSRIs and SNRIs. If successfully developed and approved, zuranolone may also face competition from esketamine, which is approved in the treatment of treatment resistant depression. A number of companies are developing product candidates intended for the treatment of MDD, including NMDA receptor antagonists or partial antagonists such as dextromethorphan/bupropion. In November 2020, Axsome Therapeutics, Inc. announced that it expected to file its NDA for its NMDA receptor antagonist, AXS-05, in January 2021.

In the field of neuroactive steroids focused specifically on modulation of GABAA receptors, we also face competition from a number of companies, including Marinus Pharmaceuticals, Inc., or Marinus, and Praxis Precision Medicines, or Praxis. Marinus is developing a form of ganaxolone, a known GABAA positive allosteric modulator neuroactive steroid, that is in Phase 3 trials in patients with status epilepticus and CDLK5 deficiency disorder. Praxis is developing PRAX-114, a GABAA receptor modulating neuroactive steroid, for MDD and is currently reported as being in Phase 2/3 development.

SAGE-324, a novel GABAA receptor positive allosteric modulator, is in Phase 2 development in essential tremor. If successfully developed and approved, SAGE-324 may face competition from a Phase 2b-ready T-type calcium channel modulator in development for essential tremor by Jazz Pharmaceuticals, Inc.

A number of companies are working to develop products targeted at the NMDA receptor, both antagonists and agonists. Aptinyx Inc. has multiple Phase 2 NMDA receptor modulators in development for multiple indications, including NYX-458 for the treatment of cognitive impairment in Parkinson's disease.

Many of our potential competitors, alone or with their strategic partners, have substantially greater financial, technical and human resources than we do, and significantly greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of treatments and the commercialization of those treatments. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. We expect competition in the indications we are pursuing will focus on efficacy, safety, convenience, availability, and price. 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. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market.

Government Regulation

Government authorities in the U.S. at the federal, state and local level and in other countries extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring/pharmacovigilance, safety and periodic reporting, marketing and export and import of drug products. Generally, before a new drug can be marketed in a given jurisdiction, considerable data demonstrating its quality, safety and efficacy must be obtained and/or generated, organized into a format specific to each regulatory authority, submitted for review and the drug must be approved by the relevant regulatory authority or authorities.

U.S. Drug Development

In the U.S., the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and its implementing regulations. Drugs are also subject to other federal, state and local statutes and regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, and local statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject a company to administrative or judicial sanctions. These sanctions could include, among other actions, the FDA's delay or refusal to approve pending applications, withdrawal of an approval, a clinical hold on a clinical investigation, warning or untitled letters, product recalls or withdrawals from the market, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement, or civil penalties or criminal prosecution. Any agency or judicial enforcement action could have a material adverse effect on us.

Our product candidates must be approved by the FDA through the NDA process before they may be legally marketed in the U.S. The process required by the FDA before a drug may be marketed in the U.S. requires substantial time, effort and financial resources and generally involves the following:

- Completion of extensive non-clinical studies and testing, sometimes referred to as non-clinical laboratory tests, non-clinical animal studies and formulation studies, in accordance with applicable regulations, including the FDA's current Good Laboratory Practice, or GLP, regulations;
- Submission to the FDA of an IND application, which must become effective before human clinical trials may begin;

- Approval by an independent institutional review board, or IRB, or ethics committee representing each clinical trial site before each trial may be initiated;
- Performance of adequate and well-controlled human clinical trials in accordance with applicable IND and other clinical trial-related regulations, sometimes collectively referred to as good clinical practice, or GCP, to establish the safety and efficacy of the proposed drug for each proposed indication;
- Submission to the FDA of an NDA for marketing approval of a new drug;
- A determination by the FDA within 60 days of its receipt of an NDA to accept and file the NDA for review;
- Satisfactory completion of a potential FDA pre-approval inspection of the manufacturing facility or facilities where the drug is produced to assess compliance with cGMP requirements to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- Potential FDA audit of the non-clinical and/or clinical trial sites that generated the data in support of the NDA; and
- Payment of applicable user fees and FDA review and approval of the NDA, including consideration of the views of any FDA advisory committee, prior to any commercial marketing or sale of the drug in the U.S.

The data required to support an NDA are generated in two distinct development stages: non-clinical and clinical. For new chemical entities, the non-clinical development stage generally involves synthesizing the active component, developing the formulation and determining the manufacturing process, as well as carrying out non-human toxicology, pharmacology and drug metabolism studies in the laboratory, which support subsequent clinical testing. Non-clinical tests include laboratory evaluation of product chemistry, formulation, stability and toxicity, as well as animal studies to assess the characteristics and potential safety and efficacy of the product. The conduct of the non-clinical tests must comply with federal laws and regulations, including, for animal studies, the Animal Welfare Act and GLP. The sponsor must submit the results of the non-clinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND.

An IND is a request for authorization from the FDA to administer an investigational drug product to humans. Some non-clinical testing may continue even after the IND is submitted, but an IND must become effective before human clinical trials may begin. The central focus of an IND submission is on the general investigational plan and the protocols for human trials. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA raises concerns or questions regarding the proposed clinical trials, including whether subjects will be exposed to unreasonable health risks, and places the IND on clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA may also impose clinical holds on a drug candidate at any time before or during clinical trials due to safety concerns or non-compliance. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that could cause the trial to be suspended or terminated.

The clinical stage of development involves the administration of the drug candidate to healthy volunteers or to patients with the disease or condition being studied under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control. Clinical trials must be conducted in accordance with GCPs, which establish standards for conducting, recording data from, and reporting the results of, clinical trials, and are intended to assure that the data and reported results are credible and accurate, and that the rights, safety, and well-being of study participants are protected. GCPs include the requirement that all research subjects provide their informed consent for their participation in any given clinical trial. Clinical trials are conducted under protocols describing, among other details, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety and assess efficacy. Each protocol, and any subsequent amendments to the protocol, must be submitted to the FDA as part of the IND. Further, each clinical trial must be reviewed and approved by an IRB at or servicing each institution at which the clinical trial will be conducted. An IRB is charged with protecting the welfare and rights of trial participants, and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are

reasonable in relation to anticipated benefits. The IRB also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed. Companies sponsoring the clinical trials, investigators, and IRBs also must comply with, as applicable, regulations and guidelines for obtaining informed consent from the study patients, following the protocol and investigational plan, adequately monitoring the clinical trial, and timely reporting of adverse events. There are also requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries.

A sponsor who wishes to conduct a clinical trial outside the U.S. may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. Foreign studies conducted under an IND must meet the same requirements that apply to studies being conducted in the U.S. If a foreign clinical trial is not conducted under an IND, the sponsor may submit data from the clinical trial to the FDA in support of an NDA so long as the clinical trial is conducted in compliance with GCP, including review and approval by an independent ethics committee and compliance with informed consent principles, and FDA is able to validate the data from the study through an onsite inspection if deemed necessary.

Clinical Trials

Clinical trials are generally conducted in three phases that may overlap, known as Phase 1, Phase 2 and Phase 3 clinical trials.

- Phase 1 clinical trials generally involve a small number of healthy volunteers who are initially exposed to a single dose and then multiple doses of the product candidate. The primary purpose of these clinical trials is to assess the metabolism, pharmacologic action, side effect tolerability and safety of the drug.
- Phase 2 clinical trials typically involve studies in patients afflicted with the target disease to determine the dose required to produce the desired benefits. At the same time, safety and further pharmacokinetic and pharmacodynamic information is collected, as well as identification of possible adverse effects and safety risks and preliminary evaluation of efficacy.
- Phase 3 clinical trials generally involve large numbers of patients afflicted with the target disease at multiple sites (typically from several hundred to several thousand subjects), and are designed to provide the data necessary to demonstrate the effectiveness of the product for its intended use, its safety in use, and to establish the overall benefit/risk relationship of the product and provide an adequate basis for product approval and labeling. Phase 3 clinical trials may include comparisons with placebo and/or other comparator treatments. The duration of treatment is often extended for drugs intended for chronic dosing to mimic the actual use of a product during marketing.

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. In certain instances, FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and written IND safety reports must be submitted to the FDA and the investigators for serious and unexpected suspected adverse events, increased rates of serious suspected adverse events, or findings from other studies or from animal or in vitro testing that suggests a significant risk for human subjects. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. Success in one phase does not mean that the results will be observed in subsequent phases. Each phase may involve multiple studies. If concerns arise about the safety of the product candidate, the FDA or other regulatory authorities can stop clinical trials by placing them on a “clinical hold” pending receipt of additional data, which can result in a delay or termination of a clinical development program. The sponsoring company, the FDA, or the IRB may suspend or terminate a clinical trial at any time on various grounds, including a finding that the patients are being exposed to an unacceptable health risk.

Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution 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. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee. This group provides authorization for whether or not a trial may move forward at designated check points based on access to certain data from the trial, and may suspend a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug 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 drug candidate and, among other things, we must develop methods for testing the identity, strength, quality and purity of the final drug product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf life.

NDA and FDA Review Process

The results of non-clinical studies and of the clinical trials, together with other detailed information, including extensive manufacturing information and information on the composition of the drug and proposed labeling, are submitted to the FDA in the form of an NDA requesting approval to market the drug for one or more specified indications. The FDA reviews an NDA to determine, among other things, whether a drug is safe and effective for its intended use and whether the product is being manufactured in accordance with cGMP to assure and preserve the product's identity, strength, quality and purity. FDA approval of an NDA must be obtained before a drug may be offered for sale in the U.S.

In addition, under the Pediatric Research Equity Act certain NDAs or supplements to an NDA must contain data to assess the safety and efficacy 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 grant deferrals for submission of pediatric data or full or partial waivers. Under the Best Pharmaceuticals for Children Act, the FDA may also issue a Written Request asking a sponsor to conduct pediatric studies related to a particular active moiety; if the sponsor agrees and meets certain requirements, the sponsor may be eligible to receive additional marketing exclusivity for its drug product containing such active moiety.

Under the Prescription Drug User Fee Act, as amended, or PDUFA, each NDA must be accompanied by a user fee, unless subject to a waiver. The FDA adjusts the PDUFA user fees on an annual basis. According to the FDA's fee schedule, effective through September 30, 2021, the user fee for an application requiring clinical data, such as an NDA, is approximately $2.87 million. PDUFA also imposes an annual prescription drug program fee for human drugs of approximately $0.3 million. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business. Additionally, no user fees are assessed on NDAs for products designated as orphan drugs, unless the product also includes a non-orphan-designated indication.

The FDA reviews all NDAs submitted before it accepts them for filing, and may request additional information rather than accepting an NDA for filing. The FDA must make a decision on accepting an NDA for filing within 60 days of receipt. Once the submission is accepted for filing, the FDA begins an in-depth review of the NDA. Under the goals and policies agreed to by the FDA under PDUFA, the FDA aims to complete its initial review of an NDA and respond to the applicant within 10 months from the filing date for a standard NDA and, and within six months from the filing date for a priority NDA. The FDA does not always meet its PDUFA goal dates for standard and priority NDAs, and the review process is often significantly extended by FDA requests for additional information or clarification.

After the NDA submission is accepted for filing, the FDA reviews the NDA to determine, among other things, whether the proposed product is safe and effective for its intended use, and whether the product is being manufactured in accordance with cGMP to assure and preserve the product's identity, strength, quality and purity. Before approving an NDA, the FDA will generally conduct a pre-approval inspection of the manufacturing facilities for the new product to determine whether the facilities comply with cGMPs. The FDA will not approve the product 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. Before approving an NDA, the FDA may also audit data from clinical trials to ensure compliance with GCP requirements and integrity of the data submitted in the NDA. Additionally, the FDA may refer applications for novel drug products or drug products which present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions. For example, the advisory committee may recommend or the FDA may determine that a REMS program is necessary to ensure safe use of the product. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. The FDA will likely re-analyze the clinical trial data, which could result in extensive discussions between the FDA and the applicant during the review process. The review and evaluation process for an NDA by the FDA is extensive and time consuming and may take longer than originally planned to complete, and we may not receive a timely approval, if at all.

After the FDA evaluates an NDA, it may issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application is not ready for approval. A Complete Response Letter usually describes all of the specific deficiencies in the NDA identified by the FDA. The Complete Response Letter may require additional clinical data and/or one or more additional pivotal Phase 3 clinical trials, and/or other significant and time-consuming requirements related to clinical trials, non-clinical studies or manufacturing. If a Complete Response Letter is issued, the applicant may either resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application. Even if such additional data and information are submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. Data obtained from clinical trials are not always conclusive, and the FDA may interpret data differently than we interpret the same data.

There is no assurance that the FDA will ultimately approve a drug product for marketing in the U.S., and we may encounter significant difficulties or costs during the review process. If a product receives marketing approval, the approval may be significantly limited to specific patient populations and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA typically requires that certain contraindications, warnings or precautions be included in the product labeling, and may condition the approval of the NDA on other changes to the proposed labeling, development of adequate controls and specifications, or a commitment to conduct post-marketing testing or clinical trials and surveillance to monitor the effects of approved products. For example, the FDA may require Phase 4 testing which may involve clinical trials designed to further assess a drug's safety and/or efficacy and may require testing and surveillance programs to monitor the safety of approved products that have been commercialized. The FDA may also place other conditions on approvals including the requirement for a REMS to assure the safe use of the drug. If the FDA concludes a REMS is needed, the sponsor of the NDA must submit a proposed REMS. The FDA will not approve the NDA without an approved REMS, if the FDA determines that a REMS is required. A REMS 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. For example, the FDA has required a REMS for ZULRESSO to mitigate the potential for harm associated with the risk of excessive sedation and loss of consciousness during the ZULRESSO infusion. As part of the REMS, administration of ZULRESSO is limited to certified healthcare settings that have been certified under a REMS program under the supervision of qualified staff, and patients who are prescribed ZULRESSO are required to enroll in a patient registry which may allow us to compile additional information to further our understanding of the risk of serious harm resulting from excessive sedation or sudden loss of consciousness during administration of ZULRESSO and management of the risk. Any limitations on approval, marketing or use for any of our products could restrict the commercial promotion, distribution, prescription or dispensing of those products. Product approvals may be withdrawn for non-compliance with regulatory requirements if problems occur following launch, or if FDA determines that the product is no longer safe or effective.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug product intended to treat a "rare disease or condition," which is generally a disease or condition that affects fewer than 200,000 individuals in the U.S., or

more than 200,000 individuals in the U.S., but for which there is no reasonable expectation that the cost of developing and making a drug product available in the U.S. for this type of disease or condition will be recovered from sales of the product. If orphan product designation is sought, it must be requested before submitting an NDA for the drug for the proposed rare disease or condition. If the FDA grants orphan drug designation, the common name of the therapeutic agent and its designated orphan use are disclosed publicly by the FDA. Orphan product designation does not, by itself, convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other sponsors' applications to market the same drug for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan exclusivity. Orphan exclusivity operates independently from other regulatory exclusivities and other protection against generic competition, including patents that we hold for our products. A sponsor of a product application that has received an orphan drug designation may also be granted tax incentives for clinical research undertaken to support the application. In addition, the FDA may coordinate with the sponsor on research study design for an orphan drug and may exercise its discretion to grant marketing approval on the basis of more limited product safety and efficacy data than would ordinarily be required, based on the limited size of the applicable patient population.

Competitors, however, 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 than that for which the orphan product has exclusivity. Orphan product exclusivity also could block the approval of one of our products for seven years if a competitor obtains approval of the same product as defined by the FDA or if our product candidate is determined to be contained within the competitor's product for the same indication or disease. If a drug designated as an orphan product receives marketing approval for an indication broader than what is designated, it may not be entitled to orphan product exclusivity. The FDA can revoke a product's orphan drug exclusivity under certain circumstances, including when the holder of the approved orphan drug application is unable to assure the availability of sufficient quantities of the drug to meet patient needs. Orphan drug status in the EU has similar, but not identical, benefits.

Expedited Development and Review Programs

The FDA has several programs that are intended to expedite or facilitate the process for reviewing new drugs that are intended to treat a serious or life-threatening condition and demonstrate the potential to address unmet medical needs for the condition and provides meaningful therapeutic benefit over existing treatments. Fast Track designation and Breakthrough Therapy designation are two of these programs and apply to the combination of the product and the specific indication for which it is being studied. The sponsor of a new drug or biologic may request the FDA to designate the drug as a Fast Track product at any time during the development of the product and may request the FDA to designate the drug as a Breakthrough Therapy based on preliminary clinical evidence which meet the criteria outlined in the FDA's programs. Under the Fast Track or Breakthrough Therapy expedited programs, the FDA may review sections of the marketing application on a rolling basis before the complete NDA 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.

Any product submitted to the FDA for marketing, including under a Fast Track or Breakthrough Therapy program, may be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval.

Any product is eligible for priority review if it treats a serious condition and offers a significant improvement in the safety and effectiveness of treatment, diagnosis or prevention compared to marketed products. Significant improvement may be shown by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting product reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, and evidence of safety and effectiveness in a new subpopulation. The FDA will attempt to direct additional resources to the evaluation of an application for a new drug designated for priority review in an effort to

facilitate the review, and to shorten the FDA's goal for taking action on a marketing application from ten months to six months from the date of the NDA filing.

A product may also be eligible for accelerated approval if the product is intended to treat a serious or life-threatening illness and provides meaningful therapeutic benefit over existing treatments. Accelerated approval for a product means that it may be approved on the basis of adequate and well-controlled clinical trials establishing that the product has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on a clinical endpoint other than survival or irreversible morbidity. 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. If the FDA concludes that a drug shown to be effective can be safely used only if distribution or use is restricted, it will require such post-marketing restrictions, as it deems necessary to assure safe use of the drug, such as:

- distribution restricted to certain facilities or physicians with special training or experience; or
- distribution conditioned on the performance of specified medical procedures.

The limitations imposed would be commensurate with the specific safety concerns presented by the drug. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Fast Track designation, priority review, accelerated approval and Breakthrough Therapy designation do not change the standards for approval, but may expedite the development or approval process.

Pediatric Trials

The Food and Drug Administration Safety and Innovation Act, which was signed into law on July 9, 2012, amended the FDCA to require that a sponsor who is planning to submit a marketing application for a drug that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan, or PSP, within sixty days of an end-of-Phase 2 meeting or as may be agreed between the sponsor and FDA. The initial PSP must include an outline of the pediatric study or studies that the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. FDA and the sponsor must reach agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from non-clinical studies, early phase clinical trials, and/or other clinical development programs. The FDA, if it learns of new information, may also request that the sponsor amend the initial PSP.

Post-marketing Requirements

Following approval of a new product, a pharmaceutical company and the approved product are subject to continuing regulation by the FDA, including, among other things, monitoring and recordkeeping activities, reporting to the applicable regulatory authorities of adverse experiences with the product, providing the regulatory authorities with updated safety and efficacy information, product sampling and distribution requirements, and complying with promotion and advertising requirements, which include, among others, standards for direct-to-consumer advertising, restrictions on promoting drugs for uses or in patient populations that are not described in the drug's approved labeling (known as "off-label use"), limitations on industry-sponsored scientific and educational activities, and requirements for promotional activities involving the Internet. Although physicians may prescribe legally available drugs for off-label uses, manufacturers may not market or promote such off-label uses. Prescription drug promotional materials must be submitted to the FDA in conjunction with their first use. Further, if there are any modifications to the drug, including changes in indications, labeling, or manufacturing processes or facilities, the applicant may be required to submit and obtain FDA approval of a new NDA or NDA supplement, which may require the applicant to develop additional data or conduct additional non-clinical studies and clinical trials. As with new NDAs, the review process is often significantly extended by FDA requests

for additional information or clarification. Any distribution of prescription drug products and pharmaceutical samples must comply with the U.S. Prescription Drug Marketing Act and the Drug Supply Chain Security Act.

FDA regulations also require that approved products be manufactured in specific approved facilities and in accordance with cGMP. We rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our products in accordance with cGMP regulations. NDA holders using contract manufacturers, laboratories or packagers are responsible for the selection and monitoring of qualified firms, and, in certain circumstances, qualified suppliers to these firms. These manufacturers must comply with cGMP regulations that require, among other things, quality control and quality assurance as well as the corresponding maintenance of records and documentation and the obligation to investigate and correct any deviations from cGMP. Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP and other laws. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. The discovery of violative conditions, including failure to conform to cGMP, could result in enforcement actions that interrupt the operation of any such facilities or the ability to distribute products manufactured, processed or tested by them. Discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved NDA, including, among other things, recall or withdrawal of the product from the market.

Discovery of previously unknown problems with a product or the failure to comply with applicable FDA requirements can have negative consequences, including adverse publicity, administrative enforcement, warning or untitled letters from the FDA, mandated corrective advertising or communications with doctors, and civil penalties or criminal prosecution, among others. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, and also may require the implementation of other risk management measures. Also, new government requirements, including those resulting from new legislation, may be established, or the FDA's policies may change, which could delay or prevent regulatory approval of our products under development.

Other Regulatory Matters

Manufacturing, sales, promotion and other activities following product approval are also subject to regulation by numerous regulatory authorities in addition to the FDA, including, in the U.S., the Department of Health and Human Services; the U.S. Department of Justice; the DEA; the Consumer Product Safety Commission; the Federal Trade Commission; the Occupational Safety and Health Administration; the Environmental Protection Agency; and state and local governments.

In the U.S., a drug product approved by the FDA may also be subject to regulation under the CSA as a controlled substance. The CSA is administered by the DEA and establishes, among other things, certain registration, security, recordkeeping, reporting, import, export and other requirements for controlled substances. The CSA classifies controlled substances into five schedules: Schedule I, II, III, IV or V. FDA approved pharmaceutical products may be listed in Schedule II, III, IV or V, with Schedule II substances considered to present the highest potential for abuse or dependence and Schedule V substances the lowest relative risk of abuse among such substances. An approved drug product or drug candidate that has not yet been approved by the FDA may be subject to scheduling as a controlled substance under the CSA, depending on the drug's potential for abuse. For a drug approved by the FDA and determined to require control under the CSA, the CSA requires the DEA to issue an interim final order scheduling the drug within 90 days after the FDA approves the drug and the DEA receives a scientific and medical evaluation and scheduling recommendation from the Department of Health and Human Services, after it has been completed by FDA. FDA recommended, and DEA adopted, that brexanolone be scheduled as a schedule IV controlled substance.

In the U.S., arrangements and interactions with health care professionals, third-party payors, patients and others will expose us to broadly applicable anti-fraud and abuse, anti-kickback, false claims and other health care laws and regulations. These broadly applicable laws and regulations may constrain the business or financial arrangements or

relationships through which we sell, market and distribute our approved product and any future products that may obtain marketing approval. In the U.S., federal and state health care laws and regulations that may affect our operations include:

- The federal Anti-Kickback Statute, which makes it illegal for any person, including a company marketing a prescription drug (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, in cash or in kind, that is intended to induce or reward the referral of an individual or purchase, lease or order, or the arranging for or recommending the purchase or order, of a particular item or service, for which payment may be made in whole or in part under a federal healthcare program, such as Medicare or Medicaid. This statute has been interpreted to apply to arrangements between pharmaceutical companies on one hand and prescribers, patients, purchasers and formulary managers on the other. Liability under the Anti-Kickback Statute may be established without proving actual knowledge of the statute or specific intent to violate it. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Although there are a number of statutory exemptions and regulatory safe harbors to the federal Anti-Kickback Statute protecting certain common business arrangements and activities from prosecution or regulatory sanctions, the exemptions and safe harbors are drawn narrowly. Practices that involve remuneration to those who prescribe, purchase, or recommend pharmaceutical and biological products, including certain discounts, or engaging such individuals as consultants, advisors, or speakers, may be subject to scrutiny if they do not fit squarely within an exemption or safe harbor. Our practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability. Moreover, there are no safe harbors for many common practices, such as educational and research grants, charitable donations, product support and patient assistance. Violations of this law may be punishable by up to ten years in prison, criminal fines, damages, administrative civil money penalties, and the potential for exclusion from participation in federal healthcare programs.
- The federal civil False Claims Act, which prohibits anyone from, among other things, knowingly presenting, or causing to be presented claims for payment of government funds that are false or fraudulent, or knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim or knowingly and improperly avoiding, decreasing or concealing an obligation to pay money to the federal government. Actions under the False Claims Act may be brought by the federal government or as a qui tam action by a private individual in the name of the government. Many pharmaceutical manufacturers have been investigated and have reached substantial financial settlements with the federal government under the civil False Claims Act for a variety of alleged improper activities. The government may deem companies to have "caused" the submission of false or fraudulent claims by, for example, providing inaccurate billing or coding information to customers or promoting a product off-label. In addition, our activities relating to the reporting of prices used to calculate Medicaid rebate information and other information affecting federal, state, and third-party reimbursement for our products, and the sale and marketing of our products, are subject to scrutiny under this law. Penalties for a False Claims Act violation may include three times the actual damages sustained by the government, plus significant civil penalties for each separate false or fraudulent claim, and the potential for exclusion from participation in federal healthcare programs.
- Numerous federal and state laws, including state data breach notification laws, state health information and/or genetic privacy laws, and federal and state consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act and the California Consumer Privacy Act), govern the collection, use, and disclosure and protection of health-related and other personal information. Failure to comply with these laws and regulations could result in government enforcement actions and create liability, private litigation, or adverse publicity. In addition, we or our collaborators may obtain health information from third parties, such as hospitals, healthcare professionals, and research institutions, that are subject to privacy and security requirements under the federal Health Insurance Portability and Accountability Act of 1996, and its implementing regulations, or collectively, HIPAA. HIPAA imposes privacy and security obligations on covered entity health care providers, health plans, and health care clearinghouses, as well as their "business associates" – independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. Although we are not directly subject to the HIPAA information privacy and security provisions – other than with respect to providing certain employee benefits – we could potentially be subject to criminal penalties if we or our agents knowingly obtain, use, or disclose individually identifiable health information maintained by a HIPAA-covered entity in a manner that is not authorized or permitted by

HIPAA. In addition, HIPAA does not replace federal, state, or other laws that may grant individuals even greater privacy protections.

- The HIPAA fraud provisions, which impose criminal and civil liability for knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors, and prohibit knowingly and willfully falsifying, concealing or covering up 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.
- The federal Physician Payment Sunshine Act, being implemented as the Open Payments Program, which requires 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 the Centers for Medicare and Medicaid Services, or CMS, the agency that administers the Medicare and Medicaid programs, information related to direct or indirect payments and other transfers of value to physicians and teaching hospitals, as well as ownership and investment interests held in the company by physicians and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report information regarding payments and transfers of value provided to physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, and certified nurse-midwives.
- Analogous state and local laws and regulations, such as state anti-kickback and false claims laws, which may apply to items or services reimbursed under Medicaid and other state programs or, in several states, regardless of the payor. We also may become subject to other state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers; state laws that restrict the ability of manufacturers to offer co-pay support to patients for certain prescription drugs; state laws that require drug manufacturers to report information related to clinical trials, or information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; state laws and local ordinances that require identification or licensing of sales representatives; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Substantial resources are necessary to ensure that our business arrangements and interactions with health care professionals, third party payors, patients and others comply with applicable health care laws and regulations. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law, and if we are found to be in violation of any of these laws or any other governmental regulations, we may be subject to significant civil, criminal and administrative penalties, imprisonment, damages, fines, exclusion from government funded health care programs such as Medicare and Medicaid, or the curtailment or restructuring of our operations. Any action against us for violation of these laws or regulations, 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.

Numerous other laws may apply to our products. Pricing and rebate programs must comply with the Medicaid rebate requirements of the U.S. Omnibus Budget Reconciliation Act of 1990 and more recent requirements in the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, collectively referred to herein as the ACA (addressed further below in the section on "U.S. Healthcare Reform"). If products are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply. Many states impose various requirements on pharmaceutical manufacturers to report development costs and pricing information when prices are increased. Penalties for late or faulty reporting can reach $10,000 per day. Products must meet applicable child-resistant packaging requirements under the U.S. Poison

Prevention Packaging Act. Manufacturing, sales, promotion and other activities are also potentially subject to federal and state consumer protection and unfair competition laws.

The handling of any controlled substances must comply with the CSA and Controlled Substances Import and Export Act.

The distribution of pharmaceutical products is subject to additional requirements and regulations, including extensive record-keeping, licensing, storage and security requirements intended to prevent the unauthorized sale of pharmaceutical products. The failure to comply with any of these laws or regulatory requirements subjects firms to possible legal or regulatory action. Depending on the circumstances, failure to meet applicable regulatory requirements can result in criminal prosecution, fines or other penalties, injunctions, issuance of warning or untitled letters, recall or seizure of products, total or partial suspension of production, denial or withdrawal of product approvals, or refusal to allow a firm to enter into supply contracts, including government contracts. Federal regulators, state attorneys general, and plaintiffs' attorneys have been and will likely continue to be active in this space. 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. Prohibitions or restrictions on sales or withdrawal of future products marketed by us could materially affect our business in an adverse way.

Many of these laws differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts. Many of the state laws enable a state attorney general to bring actions and provide private rights of action to consumers as enforcement mechanisms. There is also heightened sensitivity around certain types of health information, such as sensitive condition information or the health information of minors, which may be subject to additional protections. Compliance with these laws is difficult, constantly evolving, and time consuming. Changes in statutes, regulations or the interpretation of existing laws or 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.

U.S. Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration and specifics of the FDA approval of our drug candidates, if any, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for 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 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, or the testing phase, plus the time between the submission date of an NDA and the approval of that application, or the approval phase. This patent term restoration period may be reduced by the FDA if it finds that applicant did not act with due diligence during the testing phase or the approval phase. Only one patent applicable to an approved drug is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The U.S. PTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, if circumstances permit, we intend to apply for restoration of patent term for one of our then owned or licensed patents, if any, to add patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant NDA. Even if, at the relevant time, we have a valid issued patent covering our product, we may not be granted an extension if we were, for example, to fail to apply within applicable deadlines, to fail to apply prior to expiration of relevant patents or otherwise to fail 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 restoration or the term of any such extension is less than we request, and we do not have any other exclusivity, our competitors may obtain approval of competing products following our patent expiration and our ability to generate revenues could be materially adversely affected.

Some of our products may also be entitled to certain non-patent-related data exclusivity under the FDCA. The FDCA provides a five-year period of non-patent data exclusivity within the U.S. to the first applicant to obtain approval of an NDA for a new chemical entity, or NCE. 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, an abbreviated new drug application, or ANDA, or a 505(b)(2) NDA may not be submitted by another company for another drug containing the same active moiety, regardless of whether the drug is intended for the same indication as the original innovator drug or for another indication, 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 to one of the patents listed with the FDA Orange Book by the innovator NDA holder. The FDCA also provides three years of marketing exclusivity for a full NDA, or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example, for new indications, dosages or strengths of an existing drug. Three-year exclusivity prevents the FDA from approving ANDAs and 505(b)(2) applications that rely on the information that served as the basis of granting three-year exclusivity. This three-year exclusivity covers only the modification for which the drug received approval on the basis of the new clinical investigations, and does not prohibit the FDA from approving ANDAs for drugs containing the active agent for the original indication or condition of use. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the non-clinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and efficacy. We have obtained NCE exclusivity for brexanolone, and plan to seek NCE exclusivity for our current and future product candidates, if eligible.

European Union Drug Development

In the European Economic Area, or EEA, our future products may also be subject to extensive regulatory requirements. As in the U.S., medicinal products can only be marketed if a marketing authorization from the competent regulatory authorities in the EU has been obtained.

Similar to the U.S., the various phases of non-clinical and clinical research in the EU are subject to significant regulatory controls. Although the EU Clinical Trials Directive 2001/20/EC has sought to harmonize the EU clinical trials regulatory framework, setting out common rules for the control and authorization of clinical trials in the EU, the EU Member States have transposed and applied the provisions of the Directive in a manner that is often not uniform. This has led to variations in the rules governing the conduct of clinical trials in the individual EU Member States. The EU legislator has, therefore, adopted Regulation (EU) No 536/2014, or the EU Clinical Trials Regulation. The new EU Clinical Trials Regulation, which will repeal and replace the EU Clinical Trials Directive, introduces a complete overhaul of the existing regulation of clinical trials for medicinal products in the EU, including a new coordinated procedure for authorization of clinical trials that is reminiscent of the mutual recognition procedure for marketing authorization of medicinal products, and increased obligations on sponsors to publish clinical trial results. The entry into application of the EU Clinical Trials Regulation has been delayed and is currently not expected before 2021.

Clinical trials in the EU must currently be conducted in accordance with the requirements of the EU Clinical Trials Directive and applicable good clinical practice standards, as implemented into national legislation by EU Member States. Under the current regime, before a clinical trial can be initiated it must be approved in each EU Member State where there is a site at which the trial is to be conducted by two distinct bodies: the National Competent Authority, or NCA, and one or more Ethics Committees, or ECs. Under the current regime all suspected unexpected serious adverse reactions to the investigated drug that occur during the clinical trial have to be reported to the NCA and ECs of the Member State where they occurred.

In the EU, pediatric data or an approved Pediatric Investigation Plan, or PIP, or waiver, is required to have been approved by the European Medicines Agency, or EMA, prior to submission of a marketing authorization application to the EMA or the competent authorities of the EU Member States. In some EU countries, we may also be required to have an approved PIP before we can begin enrolling pediatric patients in a clinical trial.

European Union Drug Review and Approval and Post-marketing Requirements

In the EEA (which is comprised of 27 Member States of the EU plus Norway, Iceland and Liechtenstein), medicinal products can only be commercialized after a related marketing authorization has been granted. Marketing authorization for medicinal products can be obtained through several different procedures. These are through a centralized, mutual recognition procedure, decentralized procedure, or national procedure (if marketing authorization is sought for a single EU Member State). The centralized procedure allows a company to submit a single application to the EMA. If a related positive opinion is provided by the EMA, the European Commission will grant a centralized marketing authorization that is valid in all EU Member States and three of the four European Free Trade Associations countries (Iceland, Liechtenstein and Norway), all of whom make up the EEA.

The UK's withdrawal from the EU on January 31, 2020, commonly referred to as Brexit, has created significant uncertainty concerning the future relationship between the UK and the EU. The impact of Brexit on the ongoing validity in the UK of current EU authorizations for medicinal products, whether granted through the centralized procedure, decentralized procedure, or mutual recognition, and on the future process for obtaining marketing authorization for pharmaceutical products manufactured or sold in the UK remains uncertain.

The EU centralized procedure is mandatory for certain types of products, such as biotechnology medicinal products, orphan medicinal products, and medicinal products containing a new active substance indicated for the treatment of HIV, AIDS, cancer, neurodegenerative disorders, diabetes, auto-immune and other immune dysfunctions and viral diseases. The centralized procedure is optional for products containing a new active substance that is not yet authorized in the EEA, or for products that constitute a significant therapeutic, scientific or technical innovation or for which grant of centralized marketing authorization is in the interest of patients in the EU.

The decentralized authorization procedure permits companies to file identical applications for authorization to several EU Member States simultaneously for a medicinal product that has not yet been authorized in any EU Member State. The competent authorities of a single EU Member State, the reference member state, is appointed to review the application and provide an assessment report. The competent authorities of the other EU Member States, the concerned member states, are subsequently required to grant marketing authorization for their territories on the basis of this assessment. The only exception to this is where an EU Member State considers that there are concerns of potential serious risk to public health related to authorization of the product. In these circumstances, the matter is submitted to the Heads of Medicines Agencies for review. The mutual recognition procedure allows companies that have a medicinal product already authorized in one EU Member State to apply for this authorization to be recognized by the competent authorities in other EU Member States.

The maximum timeframe for the evaluation of a marketing authorization application in the EU is 210 days, not including clock stops during which applicants respond to questions from the competent authority. The initial marketing authorization granted in the EU is valid for five years. The authorization may be renewed and valid for an unlimited period unless the national competent authority or the European Commission decides on justified grounds to proceed with one additional five-year renewal period. The renewal of a marketing authorization is subject to a re-evaluation of the risk-benefit balance of the product by the national competent authorities or the EMA.

The holder of an EU marketing authorization for a medicinal product must also comply with the EU's pharmacovigilance legislation. This includes requirements to conduct pharmacovigilance, or the assessment and monitoring of the safety of medicinal products.

Various requirements apply to the manufacturing and placing on the EU market of medicinal products. Manufacture of medicinal products in the EU requires a manufacturing authorization, and import of medicinal products into the EU requires a manufacturing authorization allowing for import. The manufacturing authorization holder must comply with various requirements set out in the applicable EU laws, regulations and guidance. These requirements include compliance with EU cGMP standards when manufacturing medicinal products and active pharmaceutical ingredients, or APIs, including the manufacture of APIs outside of the EU with the intention to import the APIs into the EU. Similarly, the distribution of medicinal products within the EU is subject to compliance with the applicable EU laws, regulations and guidelines, including the requirement to hold appropriate authorizations for distribution granted by the competent

authorities of the EU Member States. Marketing authorization holders and/or manufacturing authorization holders and/or distribution authorization holders may be subject to civil, criminal or administrative sanctions, including suspension of manufacturing authorization, in case of non-compliance with the EU or EU Member States' requirements applicable to the manufacturing of medicinal products.

In the EU, the advertising and promotion of medicinal products are subject to EU Member States' laws governing promotion of medicinal products, interactions with physicians and other healthcare professionals, misleading and comparative advertising and unfair commercial practices. For example, applicable laws require that promotional materials and advertising in relation to medicinal products comply with the product's Summary of Product Characteristics, or SmPC, as approved by the competent authorities in connection with a marketing authorization approval. The SmPC is the document that provides information to physicians concerning the safe and effective use of the product. Promotional activity that does not comply with the SmPC is considered off-label and is prohibited in the EU. Breaches of the rules governing the promotion of medicinal products in the EU could be penalized by civil, criminal or administrative sanctions, which may include fines and imprisonment. These laws may further limit or restrict the advertising and promotion of medicinal products to the general public and may also impose limitations on promotional activities with healthcare professionals.

European Union Regulatory Data Exclusivity

In the EU, innovative medicinal products that are subject to marketing authorization on the basis of a full dossier and do not fall within the scope of the concept of global marketing authorization qualify for eight years of data exclusivity upon marketing authorization and an additional two years of market exclusivity. The concept of global marketing authorization prevents the same marketing authorization holder or members of the same group, or companies that have concluded tacit or explicit agreements concerning the marketing of the same medicinal product, from obtaining separate data and market exclusivity periods for medicinal products that contain the same active substance. This data exclusivity, if granted, prevents regulatory authorities in the EU from referencing the innovator's data to assess a generic application or biosimilar application for eight years from the date of authorization of the innovative product, after which a generic or biosimilar marketing authorization application can be submitted, and the innovator's data may be referenced. However, the generic product or biosimilar products cannot be marketed in the EU for a further two years thereafter. The overall ten-year period may be extended for a further year to a maximum of 11 years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies.

European Union Orphan Designation and Exclusivity

In the EU, orphan drug designations are granted by the European Commission based on a scientific opinion by the EMA's Committee for Orphan Medicinal Products in relation to medicinal products that are intended for the diagnosis, prevention or treatment of life-threatening or chronically debilitating conditions affecting not more than 5 in 10,000 persons in the EU and in relation to which there exists no satisfactory method of diagnosis, prevention, or treatment (or the product would be a significant benefit to those affected). Additionally, designation is granted for products intended for the diagnosis, prevention, or treatment of a life-threatening, seriously debilitating or serious and chronic condition and when, without incentives, it is unlikely that sales of the drug in the EU would be sufficient to justify the necessary investment in developing the medicinal product.

Orphan medicinal products are entitled to ten years of exclusivity in all EU Member States. However, marketing authorization may be granted to a similar medicinal product with the same orphan indication during the ten-year period with the consent of the marketing authorization holder for the original orphan medicinal product or if the manufacturer of the original orphan medicinal product is unable to supply sufficient quantities of the product. Marketing authorization may also be granted to a similar medicinal product with the same orphan indication if the similar product is deemed safer, more effective or otherwise clinically superior to the original orphan medicinal product. The period of market exclusivity may, in addition, be reduced to six years if it is established that the criteria for orphan designation are no longer met, such as if

it can be demonstrated on the basis of available evidence that the original orphan medicinal product is sufficiently profitable not to justify maintenance of market exclusivity.

In addition, grant of orphan designation by the European Commission also entitles the holder of this designation to financial incentives such as reduction of fees or fee waivers. Orphan drug designation must be requested before submitting an application for marketing authorization. Orphan drug designation does not, in itself, convey any advantage in, or shorten the duration of, the regulatory review and authorization process.

European Union Data Protection

EU Member States and other jurisdictions where we may in the future operate have adopted data protection laws and regulations, which impose significant compliance obligations. For example, the General Data Protection Regulation, or GDPR, which became applicable on May 25, 2018, replacing the EU Data Protection Directive, imposes strict obligations and restrictions on the ability to collect, analyze and transfer personal data, including health data from clinical trials and adverse event reporting. Data protection authorities from the different EU Member States may interpret the GDPR and applicable related national laws differently and impose requirements additional to those provided in the GDPR. In addition, guidance on implementation and compliance practices may be updated or otherwise revised, which adds to the complexity of processing personal data in the EEA.

Legal mechanisms to allow for the transfer of personal data from the EEA to the U.S. have been challenged in the European Court of Justice. In 2016, the European Commission and the U.S. Department of Commerce put in place the EU U.S. "Privacy Shield," which was subsequently relied on by some U.S. companies to transfer data to the U.S. However, on July 16, 2020 the European Court of Justice ruled the Privacy Shield to be invalid. As a result, companies may no longer rely on the Privacy Shield as a basis on which to transfer personal data from the EU to the U.S. U.S.-based companies are permitted to rely on other authorized means and procedures to transfer personal data provided by the GDPR. However, the most common authorized procedure to transfer personal data out of the EU, the European Commission's Standard Contractual Clauses may, as a result of the European Court of Justice's judgement of July 16, 2020, also come under increased scrutiny. Following the European Court of Justice's ruling, the European Data Protection Board issued a statement providing among other things that it is a primary responsibility of the exporter and the importer, when considering whether to rely on Standard Contractual Clauses to export data from the EU to third countries, to ensure that these third countries maintain a level of protection that is essentially equivalent to that guaranteed by the GDPR in light of the EU Charter of Human Rights. Companies may need to revise their Standard Contractual Clauses in light of the July 16, 2020 judgement. Companies that have not taken steps to demonstrate that their Standard Contractual Clauses and personal data recipients in the U.S. are suitable to transfer to receive the personal data may be subject to enforcement actions by competent authorities in the EU for failure to comply with related data privacy rules.

In addition, the privacy and data security landscape in the EU continues to remain in flux. The EU-UK Trade and Cooperation Agreement, which was signed on December 30, 2020, provides that personal data can continue to flow freely from the EEA to the UK for a limited specified period of time. The agreement provides for a transition period of six months starting January 1, 2021. During this period personal data may, in accordance with the requirements of the GDPR, flow from the EEA to the UK and from the UK to the EEA. If the European Commission does not adopt an adequacy decision concerning the level of data protection in the UK within this six month period, any potential flows of personal data between the EEA and the UK will subsequently be subject to the same restrictions as those imposed on other third countries.

The GDPR has introduced additional data protection obligations that can have specific impact on the conduct of clinical trials in the EEA. This includes obligations concerning the rights of patients in relation to their personal data collected during the clinical trials and the need to conclude arrangements with clinical trials sites concerning data processing activities.

Rest of the World Regulation

For other countries outside of the U.S. and EU, such as countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. In all cases, the 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.

Approval by a regulatory authority in one jurisdiction does not guarantee approval by comparable regulatory authorities in other jurisdictions. If we fail to comply with applicable foreign regulatory requirements applicable to a given country, we may not be able to obtain regulatory approval for our product candidates in such country if we choose to seek such approval, or 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.

Coverage and Reimbursement

U.S. Healthcare Reform

The containment of healthcare costs has become a priority of federal and state governments, and the prices of drugs have been a focus in this effort. Changes in government legislation or regulation and changes in private third-party payors' policies toward reimbursement for our products, if successfully developed and approved, may reduce reimbursement of our products' costs to physicians, pharmacies, patients, and distributors. The U.S. government, state legislatures and foreign governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could limit our net revenue and results for products, if any, we commercialize in the future.

The pricing and reimbursement environment for our products may change in the future and become more challenging due to state and federal healthcare reform measures. The American Recovery and Reinvestment Act of 2009, or ARRA, for example, allocated new federal funding to compare the effectiveness of different treatments for the same condition. 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 ARRA does not mandate the use of the results of comparative effectiveness studies for reimbursement purposes, it is not clear what effect, if any, the research will have on the sales of any products for which we receive marketing approval or on the reimbursement policies of public and private payors. It is possible that comparative effectiveness research demonstrating benefits in a competitor's product could adversely affect the sales of any product for which we receive marketing approval. For example, if third-party payors find our products not to be cost-effective compared to other available therapies, they may not cover our products 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 products on a profitable basis.

The ACA is a sweeping measure intended to expand healthcare coverage within the U.S., primarily through the imposition of health insurance mandates on employers and individuals, the provision of subsidies to eligible individuals enrolled in plans offered on the health insurance exchanges, and the expansion of the Medicaid program. This law has substantially changed the way healthcare is financed by both governmental and private insurers and has significantly impacted the pharmaceutical industry. Changes that may affect our business include those governing enrollment in federal healthcare programs, reimbursement changes, benefits for patients within a coverage gap in the Medicare Part D prescription drug program (commonly known as the "donut hole"), rules regarding prescription drug benefits under the health insurance exchanges, changes to the Medicaid Drug Rebate program, expansion of the Public Health Service Act's 340B drug pricing program, or 340B program, and fraud and abuse enforcement. These changes have impacted previously existing government healthcare programs and have resulted in the development of new programs, including Medicare payment for performance initiatives and improvements to the Medicare physician quality reporting system and feedback program.

One of the goals of ACA was to expand coverage for the uninsured while at the same time containing overall healthcare costs. With regard to pharmaceutical products, among other things, the ACA increased minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program and extended manufacturers' Medicaid rebate liability to drugs dispensed to individuals who are enrolled in Medicaid managed care organizations. The ACA also requires 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 to physicians and teaching hospitals, as well as ownership and investment interests held in the company by physicians and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report information regarding payments and transfers of value provided to physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, and certified nurse-midwives. Failure to submit required information may result in civil monetary penalties of $1,000 to $10,000 for each payment or ownership interest that is not timely, accurately, or completely reported (annual maximum of $150,000), and $10,000 to $100,000 for each knowing failure to report (annual maximum of $1 million).

Some states have elected not to expand their Medicaid programs by raising the income limit to 133% of the federal poverty level, as is permitted under the ACA. For each state that does not choose to expand its Medicaid program, there may be fewer insured patients overall, which could impact sales of our products that are approved and that we successfully commercialize, and our business and financial condition. Where Medicaid patients receive insurance coverage under any of the new options made available through the ACA, the possibility exists that manufacturers may be required to pay Medicaid rebates on drugs used under these circumstances, a decision that could impact manufacturer revenues.

Certain provisions of the ACA have been subject to judicial challenges as well as efforts to repeal or replace them or to alter their interpretation or implementation. For example, the U.S. Tax Cuts and Jobs Act of 2017, signed into law in December 2017, included a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." Currently, the Supreme Court is considering whether the ACA's individual mandate, is unconstitutional following the repeal of its associated tax penalty, and, if so, whether the remaining provisions of the ACA are inseverable from the mandate; a ruling could produce any of a number of results, including invalidation of the ACA in its entirety based on a finding of inseverability, and is expected by mid-2021. It is unclear how the ultimate decision in this case, or other efforts to repeal, replace, or invalidate the ACA or its implementing regulations, or portions thereof, will affect the ACA or our business. We expect that the ACA, its implementation, efforts to repeal or replace, or invalidate the ACA or portions thereof, and other healthcare reform measures that may be adopted in the future, could have a material adverse effect on our industry generally and on our ability to commercialize our product candidates, if approved.

Other legislative changes relating to reimbursement have been adopted in the U.S. since the ACA was enacted. For example, on August 2, 2011, the Budget Control Act of 2011, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals for spending reductions. The Joint Select Committee did not achieve a targeted deficit reduction, which triggered the legislation's automatic reductions. In concert with subsequent legislation, this has resulted in aggregate reductions to Medicare payments to providers of, on average, 2% per fiscal year through 2030 (with the exception of a temporary suspension from May 1, 2020 through March 31, 2021) unless Congress takes additional action. As long as these cuts remain in effect, they could adversely impact payment for any products we may commercialize in the future. We expect that additional federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, and in turn could significantly reduce the projected value of certain development projects and reduce our profitability.

Pharmaceutical Pricing and Reimbursement

Sales of ZULRESSO and any product candidates we successfully commercialize, if approved, in the future depend on the availability and extent of coverage and reimbursement from third-party payors, which are increasingly reducing reimbursements for medical products and services. Decreases in third-party reimbursement for our products or a decision

by a third-party payor not to cover a product could reduce physician usage of our products and have a material adverse effect on our sales, results of operations and financial condition. In the U.S., healthcare providers are reimbursed for covered services and products through Medicare, Medicaid, and other government healthcare programs, as well as through commercial insurance and managed healthcare organizations. No uniform policy of coverage and reimbursement for drug products exists. Accordingly, decisions regarding the extent of coverage and amount of reimbursement to be provided for any of our products will be made on a payor-by-payor basis. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be obtained.

We participate in the Medicaid Drug Rebate Program and other governmental programs. The Medicaid Drug Rebate Program and other governmental programs impose obligations to report certain pricing data to the federal government as well as other compliance obligations. Other programs impose limits on the price we are permitted to charge certain entities for our products. Statutory and regulatory changes or other agency action regarding these programs and their requirements could negatively affect the coverage and reimbursement by these programs of our products for which we receive regulatory approval and could negatively impact our results of operations.

Under the Medicaid Drug Rebate Program, we are required to pay a rebate to each state Medicaid program for our covered outpatient drugs that are dispensed to Medicaid beneficiaries and paid for by a state Medicaid program as a condition of having federal funds being available for our drugs under Medicaid and Medicare Part B. Those rebates are based on pricing data we report on a monthly and quarterly basis to CMS, the federal agency that administers the Medicare and Medicaid programs. These data include the average manufacturer price and, in the case of innovator products, the best price for each drug, which, in general, represents the lowest price available from the manufacturer to any wholesaler, retailer, provider, health maintenance organization, nonprofit entity, or governmental entity in the U.S. in any pricing structure, calculated to include all sales and associated rebates, discounts, and other price concessions. The ACA (addressed further above in the section on "U.S. Healthcare Reform") made significant changes to the Medicaid Drug Rebate program, and CMS issued a final regulation, which became effective on April 1, 2016, to implement the changes to the Medicaid Drug Rebate Program under the ACA. On December 31, 2020, CMS issued a final regulation that modified prior Medicaid Drug Rebate program regulations to permit reporting multiple best price figures with regard to value-based purchasing arrangements (beginning in 2022); provide definitions for "line extension," "new formulation," and related terms, with the practical effect of expanding the scope of drugs considered to be line extensions that are subject to an alternative rebate formula (beginning in 2022); and revise best price and average manufacturer price exclusions of manufacturer-sponsored patient benefit programs, specifically regarding applicability of such exclusions in the context of pharmacy benefit manager "accumulator" programs (beginning in 2023). It is currently unclear whether the Biden administration will delay or suspend implementation of this final rule. Our failure to comply with these price reporting and rebate payment options could negatively impact our financial results.

Federal law requires that any company that participates in the Medicaid Drug Rebate Program also participate in the 340B drug pricing program in order for federal funds to be available for the manufacturer's drugs under Medicaid and Medicare Part B. The 340B program, which is administered by the Health Resources and Services Administration, or HRSA, requires participating manufacturers to agree to charge statutorily defined covered entities no more than the 340B "ceiling price" for the manufacturer's covered outpatient drugs. These 340B covered entities include a variety of community health clinics and other entities that receive health services grants from the Public Health Service, as well as hospitals that serve a disproportionate share of low-income patients. The ACA expanded the list of covered entities to include certain free-standing cancer hospitals, critical access hospitals, rural referral centers and sole community hospitals, but exempts "orphan drugs" from the ceiling price requirements for these covered entities. The 340B ceiling price is calculated using a statutory formula, which is based on the average manufacturer price and rebate amount for the covered outpatient drug as calculated under the Medicaid Drug Rebate Program, and in general, products subject to Medicaid price reporting and rebate liability are also subject to the 340B ceiling price calculation and discount requirement. Changes to the definition of average manufacturer price and the Medicaid Drug Rebate amount also could affect our 340B ceiling price calculations and negatively impact our results of operations.

HRSA issued a final regulation regarding the calculation of the 340B ceiling price and the imposition of civil monetary penalties on manufacturers that are found to have knowingly and intentionally overcharged covered entities, which became effective on January 1, 2019. It is currently unclear how HRSA will apply its enforcement authority under the regulation. We also are required to report our 340B ceiling prices to HRSA on a quarterly basis, and HRSA then publishes them to covered entities. Moreover, under a final regulation effective January 13, 2021, HRSA newly established an administrative dispute resolution, or ADR, process for claims by covered entities that a manufacturer has engaged in overcharging, and by manufacturers that a covered entity violated the prohibitions against diversion or duplicate discounts. Such claims are to be resolved through an ADR panel of government officials rendering a decision that could be appealed only in federal court. An ADR proceeding could subject a manufacturer to onerous procedural requirements and result in additional liability.

Federal law also requires that a company that participates in the Medicaid Drug Rebate Program report average sales price information each quarter to CMS for certain categories of drugs that are paid under the Medicare Part B program. Manufacturers calculate the average sales price based on a statutorily defined formula as well as regulations and interpretations of the statute by CMS. CMS uses these submissions to determine payment rates for drugs under Medicare Part B. Statutory or regulatory changes or CMS guidance could affect the average sales price calculations for our approved products and the resulting Medicare payment rate, and could negatively impact our results of operations. Also, the Medicare Part B drug payment methodology is subject to change based on legislation enacted by Congress.

Pricing and rebate calculations vary among products and programs. The calculations are complex and are often subject to interpretation by us, governmental or regulatory agencies and the courts. The Medicaid rebate amount will be computed each quarter based on our submission to CMS of our current average manufacturer prices and best prices for the quarter. If we become aware that our Medicaid reporting for a prior period was incorrect, or has changed as a result of recalculation of the pricing data, we are obligated to resubmit the corrected data for a period not to exceed three years from the period in which the data originally were due. Such restatements and recalculations would increase our costs for complying with the laws and regulations governing the Medicaid Drug Rebate Program. Any corrections to our rebate calculations could result in an overage or underage in our rebate liability for past quarters, depending on the nature of the correction. Price recalculations also may affect the ceiling price at which we are required to offer our products to covered entities under the 340B program, and may require us to issue refunds to 340B covered entities, which can be costly and burdensome.

We could be held liable for errors associated with our submission of pricing data. Civil monetary penalties can be applied if we are found to have made a misrepresentation in the reporting of our average sales price for each misrepresentation and for each day in which the misrepresentation was applied, or if we are found to have charged 340B covered entities more than the statutorily mandated ceiling price. In addition to retroactive rebates and the potential for 340B program refunds, if we are found to have knowingly submitted false average manufacturer price or best price information to the government, we may be liable for significant civil monetary penalties per item of false information. Our failure to submit monthly/quarterly average manufacturer price and best price data on a timely basis could result in a significant civil monetary penalty per day for each day the information is late beyond the due date. Such failure also could be grounds for CMS to terminate our Medicaid drug rebate agreement, pursuant to which we participate in the Medicaid program. In the event that CMS terminates our rebate agreement, no federal payments would be available under Medicaid or Medicare Part B for our covered outpatient drugs.

CMS and the Office of Inspector General have pursued manufacturers that were alleged to have failed to report these data to the government in a timely manner. Governmental agencies may also make changes in program interpretations, requirements or conditions of participation, some of which may have implications for amounts previously estimated or paid. We cannot guarantee that our submissions will not be found by CMS to be incomplete or incorrect.

In order to be eligible to have our products paid for with federal funds under the Medicaid and Medicare Part B programs and purchased by the Department of Veterans Affairs, or VA, Department of Defense, or DoD, Public Health Service, and Coast Guard (collectively, the Big Four agencies) and certain federal grantees, we are required to participate in the VA Federal Supply Schedule, or FSS, pricing program, established under Section 603 of the Veterans Health Care

Act of 1992. Under this program, we are obligated to make our "covered" drugs (*i.e.*, innovator drugs and biologics) available for procurement on an FSS contract and charge a price to the Big Four agencies that is no higher than the Federal Ceiling Price, or FCP, which is a price calculated pursuant to a statutory formula. The FCP is derived from a calculated price point called the "non-federal average manufacturer price", or Non-FAMP, which we are required to calculate and report to the VA on a quarterly and annual basis. Pursuant to applicable law, knowing provision of false information in connection with a Non-FAMP filing can subject a manufacturer to significant civil monetary penalties for each item of false information. The FSS contract also contains extensive disclosure and certification requirements. In addition, Section 703 of the National Defense Authorization Act for FY 2008, requires us to pay quarterly rebates to DoD on utilization of covered drugs that are dispensed through DoD's Tricare network pharmacies to Tricare beneficiaries. The rebates are calculated as the difference between the annual Non-FAMP and FCP for the calendar year that the product was dispensed. If we overcharge the government in connection with the FSS contract or Tricare Retail Pharmacy Rebate Program, whether due to a misstated FCP or otherwise, we will be required to refund the difference to the government. Failure to make necessary disclosures and/or to identify contract overcharges can result in allegations against us under the False Claims Act and other laws and regulations. Unexpected refunds to the government, and any response to government investigation or enforcement action, would be expensive and time-consuming, and could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

In addition, in many 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, the EU Member States have the power 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. An EU 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. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products, if approved. Historically, products launched in the EU do not follow price structures of the U.S., and generally prices tend to be significantly lower.

In various EU Member States, we expect to be subject to continuous cost-cutting measures, such as lower maximum prices, lower or lack of reimbursement coverage and incentives to use cheaper, usually generic, products as an alternative. Health Technology Assessment, or HTA, of medicinal products is becoming an increasingly common part of the pricing and reimbursement procedures in some EU Member States, including countries representing major markets. The HTA process, which is governed by the national laws of these countries, is the procedure according to which the assessment of the public health impact, therapeutic impact and the economic and societal impact of use of a given medicinal product in the national healthcare systems of the individual country is conducted. The outcome of HTA regarding specific medicinal products will often influence the pricing and reimbursement status granted to these medicinal products by the competent authorities of individual EU Member States. On January 31, 2018, the European Commission adopted a proposal for a regulation on health technologies assessment. The proposal has not yet been adopted into law. This legislative proposal is intended to boost cooperation among EU Member States in assessing health technologies, including new medicinal products, and providing the basis for cooperation at the EU level for joint clinical assessments in these areas.

Employees and Human Capital

Our key human capital management objectives are to attract, retain and develop the highest quality talent. To support these objectives, our human resources programs are designed to develop talent to prepare them for critical roles and leadership positions for the future; reward and support employees through competitive pay and benefits; enhance our culture through efforts aimed at making the workplace more engaging and inclusive; and acquire talent and facilitate internal talent mobility to create a high-performing and diverse workforce.

As of February 17, 2021, we employed 298 full-time employees, including 161 in research and development and 137 in selling, general and administrative and no part-time employees. 44 of our employees hold M.D. or Ph.D. degrees. We have never had a work stoppage, and none of our employees is represented by a labor organization or under any collective-bargaining arrangements. We consider our employee relations to be good.

Corporate Information

We commenced operations on January 19, 2011 as Sterogen Biopharma, Inc. On September 13, 2011, we changed our name to Sage Therapeutics, Inc. under our Second Amended and Restated Certificate of Incorporation. Our mailing address and executive offices are located at 215 First Street, Cambridge, Massachusetts and our telephone number at that address is (617) 299-8380. We maintain an Internet website at the following address: www.sagerx.com. The information on our website is not incorporated by reference in this Annual Report or in any other filings we make with the Securities and Exchange Commission, or SEC.

We make available on or through our website certain reports and amendments to those reports that we file with or furnish to the SEC in accordance with the Securities Exchange Act of 1934, as amended. These include our annual reports on Form 10-K, our quarterly reports on Form 10-Q, and our current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. We make this information available on or through our website free of charge as soon as reasonably practicable after we electronically file the information with, or furnish it to, the SEC.

The SEC maintains an Internet website that contains reports, proxy and information statements, and other information regarding us and other issuers that file electronically with the SEC. The SEC's Internet website address is http://www.sec.gov.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as the other information in this Annual Report and in our other public filings before making an investment decision. Our business, prospects, financial condition, or operating results could be harmed by any of these risks, as well as other risks not currently known to us or that we currently consider immaterial. If any such risks or uncertainties actually occur, our business, financial condition or operating results could differ materially from the plans, projections and other forward-looking statements included in this Annual Report, including in the foregoing Business section and later in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in this report and in our other public filings and public statements. The trading price of our common stock could decline due to any of these risks, and as a result, our stockholders may lose all or part of their investment.

Risks Related to Product Development, Regulatory Approval and Commercialization

We may never be able to generate meaningful revenues from sales of ZULRESSO® (brexanolone) CIV injection at levels or on timing necessary to support our investment and goals.

Our first product, ZULRESSO, was approved by the U.S. Food and Drug Administration, or FDA, in March 2019 as a treatment for postpartum depression, or PPD, in adults, and was made commercially available in June 2019. We may never be able to generate meaningful revenues or revenues at levels or on timing necessary to support our investment and goals. Our revenue from sales of ZULRESSO has been negatively impacted by significant barriers arising from the complex requirements for treatment and, more recently, by the rapid spread of COVID-19 in the U.S., and these factors are expected to continue to impact revenues negatively in the future.

ZULRESSO is administered as a continuous infusion given over two and a half days. Because of the risk of serious harm resulting from excessive sedation or sudden loss of consciousness during the ZULRESSO infusion, ZULRESSO is approved for administration only in a medically-supervised healthcare setting that has been certified under a Risk Evaluation and Mitigation Strategy, or REMS, program and meets the other requirements of the REMS program, including requirements related to monitoring of the patient during the infusion. The actions required for a healthcare setting to be ready and willing to treat women with PPD are complex and time-consuming. These actions include becoming REMS-certified; achieving formulary approvals; establishing protocols for administering ZULRESSO; and securing satisfactory reimbursement. Sites must often negotiate reimbursement on a payor-by-payor basis under commercial coverage. These requirements have created significant barriers to treatment for women with PPD. We expect these barriers will continue to negatively impact ZULRESSO revenue growth, but we do not know the extent of the anticipated impact. The COVID-19 pandemic has compounded these barriers and further impacted sales of ZULRESSO in the U.S. The spread of COVID-19 in the U.S. has resulted in a significant number of sites of care pausing treatment of new patients with ZULRESSO and potential new sites pausing site activation activities. We believe concerns about exposure to the virus have also caused a significant reduction in the number of women with PPD seeking treatment with ZULRESSO and in physicians willing to prescribe it. Given the ongoing nature of the pandemic across the country, we expect the significant adverse impact of the pandemic on ZULRESSO revenues to continue for the foreseeable future. Given the continued fluidity of the pandemic situation, we cannot predict its course or for how long and to what extent it will have an adverse impact on ZULRESSO sales.

In April 2020, we implemented a workforce reduction that primarily affected the ZULRESSO commercial operation and related support functions, including eliminating the entirety of our salesforce at that time. While we remain committed to working with healthcare providers and women with PPD seeking access to ZULRESSO and plan to continue to evaluate opportunities to raise awareness and help reduce hurdles to appropriate treatment, our ongoing commercial efforts, including our small account management field-based team and a small number of sales representatives, are primarily focused on geographies that have existing, active ZULRESSO treating sites. We expect that this approach may continue to substantially limit the revenue opportunity for ZULRESSO, and may make it difficult for us to achieve revenue growth and meet our revenue goals. Given this approach, the number of new healthcare settings that become treating sites for ZULRESSO, if any, may also be limited. We may also find that certain healthcare settings that have in the past been active treating sites may not be willing to remain infusion-ready as a result of the complex requirements related to administration of ZULRESSO and compliance with the REMS, related limitations and restrictions,

or because of actual or perceived difficulties obtaining satisfactory reimbursement or limitations on coverage and reimbursement or for other reasons. Healthcare settings that are active treating sites may also limit capacity used for ZULRESSO infusions.

We may encounter other issues and challenges in commercializing ZULRESSO and generating revenues, including:

- Women with PPD who need treatment may find it too onerous to undergo an infusion or to be treated at a certified healthcare setting overnight for the length of stay required for treatment, or to be enrolled in the registry or may be concerned about the risk of excessive sedation and sudden loss of consciousness.

- We may never be able to generate sufficient data for the FDA to permit administration of ZULRESSO in the home setting, even with monitoring and supervision requirements, and even if we were able to generate such data and obtain such approval, such approval may not result in an increase in market acceptance of ZULRESSO or an increase in revenues.

- More healthcare providers than we expected have been unwilling to accept ZULRESSO as a treatment paradigm for women with PPD and this could continue; we believe this unwillingness is due primarily to the product profile and reimbursement challenges associated with ZULRESSO.

- We may not be able to compete effectively with lower cost anti-depressants.

- Given the mode of administration, the nature of the REMS and the limitation on the administration of ZULRESSO to a medically-supervised healthcare setting certified under the REMS, use of ZULRESSO in the U.S. has been focused primarily on women with more severe symptoms of PPD, and we expect that to continue.

- We may be unable to fully comply with our obligations under the ZULRESSO REMS, which include auditing of healthcare settings, collection and analysis of required data, and other requirements, to the satisfaction of the FDA, or the FDA may require modifications to or additional restrictions under the ZULRESSO REMS.

We may also continue to encounter challenges related to coverage and reimbursement of ZULRESSO. These include restrictions related to the severity of PPD cases for which ZULRESSO will be reimbursed, requirements that other treatments be used prior to ZULRESSO, or other limitations in the scope, breadth, availability or amount of reimbursement covering ZULRESSO or the infusion. For example, the availability, terms and timing of coverage for ZULRESSO by state Medicaid systems is expected to continue to vary significantly by state, and we may encounter states that impose significant restrictions or lengthy delays. Similarly, certain healthcare settings or patients may determine that the financial burdens of treatment are not acceptable. For example, a number of healthcare settings that are willing to administer ZULRESSO to women with PPD who have commercial insurance do not currently treat Medicaid patients, which adversely affects our ability to generate revenue from ZULRESSO.

Any of these issues could impair our ability to generate revenues or to meet our expectations with respect to the amount or timing of revenues. Any issues or hurdles related to our commercialization efforts may materially adversely affect our business, results of operations, financial condition and prospects and could lead us to make significant further changes to the scope and nature of our efforts. There is no guarantee that we will be successful in our commercialization efforts with respect to ZULRESSO, or that we will be able to generate meaningful revenues or revenues at the levels or on the timing necessary to support our investment and goals.

Our future business prospects depend heavily on our ability, alone or through our collaborations, to successfully develop and gain regulatory approval of our current product candidates, including zuranolone (SAGE-217), which is in Phase 3 clinical development for major depressive disorder, or MDD, and PPD. We cannot be certain that we will be able to initiate planned clinical trials, to complete ongoing clinical trials or to announce results of such trials, with respect to zuranolone or any of our other product candidates, on the timelines we expect or at all or that the results of

our development programs will be positive or that the design or results of our programs will be sufficient to file for and gain regulatory approval. We cannot be certain that we or our collaborators will be able to advance our product candidates into additional trials or to successfully develop, obtain regulatory approval for, or successfully commercialize any of our current or future product candidates.

Drug development is a long, expensive and uncertain process, involving a high degree of risk. Our business depends heavily on our ability to complete clinical development and non-clinical studies of zuranolone and our other current product candidates, and to obtain regulatory approval of and successfully commercialize those product candidates. Before obtaining regulatory approvals for the commercial sale of any product candidate, non-clinical studies and clinical trials must demonstrate that the product candidate is safe and effective for use in each target indication. We or our collaborators may not be able to demonstrate the efficacy and safety of zuranolone or any of our other current product candidates or any future product candidate at each stage of clinical development or we may encounter issues with any non-clinical studies required for regulatory submissions. Success in non-clinical studies or in earlier clinical trials or interim results of clinical trials may not be repeated or observed in ongoing, future or completed studies or trials involving the same compound or other product candidates. Some or all of our or our collaborators' clinical trials may fail to meet their primary or key secondary endpoints, raise safety issues or generate mixed results. For example, in December 2019, we announced that the MOUNTAIN Study, a Phase 3 clinical trial of zuranolone for the treatment of MDD, did not meet its primary endpoint. The results of clinical trials or non-clinical studies of our product candidates at any stage may not support further development or may not be sufficient to file for and obtain regulatory approval. Even if we or our collaborators conduct the trials required by or discussed with the FDA, the FDA may ultimately decide that the design, number and type of trials, number of patients studied or results, even if positive, are not sufficient to file for or gain regulatory approval of zuranolone in MDD and PPD or of any of our other product candidates in the indications we may study, or do not support the safety or efficacy or our intended profile for the product. We also may not be able to meet the requirements for non-clinical or clinical data needed to advance such a development program. We may find that studying alternate formulations of our product candidates or doses that achieve higher or lower patient exposure may result in unexpected adverse events or raise other safety issues or may otherwise generate negative results. We are, for example, evaluating a 50 mg dose in our ongoing pivotal Phase 3 clinical trials for zuranolone, which is expected to achieve higher patient exposures than previously observed in patients enrolled in our prior multi-dose trials of zuranolone, and we are evaluating a higher dose in our Phase 2 clinical trial of SAGE-324 in essential tremor, and we might decide to do so with other studies or programs in the future. In the case of zuranolone, we or our collaborators may encounter issues with the efficacy or durability of short-term treatment, or co-initiated treatment with zuranolone and traditional antidepressants, or safety and efficacy concerns with respect to retreatment that require additional studies be conducted or cause us not to continue our efforts.

Changes in formulation or the need to refine or scale-up the manufacturing process as we do for any of our product candidates could also delay development or require us to conduct additional clinical trials or non-clinical studies or conduct post-approval analyses, or could lead to different results than achieved with the earlier formulation or processes. We or our collaborators may not be able to initiate or complete our clinical trials or announce results from our clinical trials on the timelines we expect. We or our collaborators may experience slower than expected recruitment of sites or enrollment and randomization of patients in our clinical trials, particularly in clinical trials where an in-patient stay or frequent site visits are required, the patient population is small, enrollment criteria are more selective than historically used or there are existing therapies. There is also the potential for slower than expected clinical site initiation, delays or problems in analyzing data, the potential need for additional analysis or data or the need to enroll additional patients, or other unexpected issues such as adverse events in any of our clinical trials. These types of delays or issues could lead to delays in the completion of a trial and announcement of results.

The continuing COVID-19 pandemic in the U.S. and outside the U.S. may negatively impact our ongoing and planned development activities. Concerns about COVID-19 and related precautions and restrictions may make it difficult to enroll patients in our clinical trials or may increase the rates of patients withdrawing from our clinical trials following enrollment. Some clinical sites may decline or delay participation in our trials so as to prioritize medical resources to the treatment of COVID-19 patients or as a result of recommended or required restrictions on nonessential businesses. These concerns, precautions and restrictions arising from the COVID-19 pandemic may substantially slow clinical site recruitment and initiation and enrollment in our clinical trials, or cause us to pause trials, in each case which may

significantly impact our ability to meet our expected timelines or may significantly impact our costs or other aspects of our business or cause us to have to change our plans. For example, we have seen some slower recruitment in certain of our clinical trials, especially with respect to older patients.

In response to the COVID-19 pandemic or as a result of restrictions imposed or recommended by federal, state or local authorities, we or our clinical sites have, in some cases, taken steps to help minimize the number of visits a clinical trial participant is required to make to a site, including by limiting or modifying clinical trial procedures and visits for data collection. Similarly, some clinical sites have imposed other restrictions or limitations on key clinical trial activities such as restrictions related to monitoring of the sites by clinical research organizations. Some of these measures may continue or increase in the future depending on a number of factors, including the COVID-19 case rate in a particular community, the timing of availability and extent of use of COVID-19 vaccines in the general population, and any adverse impact of the evolving spread of variants of the virus that causes COVID-19. Limitations or modifications to study procedures, study visits or data collection, restrictions on key clinical trial activities such as monitoring or auditing, or other restrictions that may affect data analysis activities may require additional assessment and evaluation from institutional review boards; negatively impact the integrity or completeness of our trial data, the powering of a trial, the integrity or relevance of clinical study endpoints; or impact the timing of availability of results.

The drug development process can take many years, and may include post-marketing studies and surveillance, which will require the expenditure of substantial resources. Of the large number of drugs in development in the U.S., only a small percentage will successfully complete the FDA regulatory approval process and will be commercialized. Accordingly, even if we have the requisite financial resources, when needed, to continue to fund our development efforts, we cannot assure you that any of our current or future product candidates will be successfully developed or commercialized either in the U.S. or in any country outside the U.S.

Even if we or a collaborator of ours gain approval of any of our current or future product candidates, we may never be able to successfully commercialize such new product or to meet our expectations with respect to revenues or profits from sales of such product.

ZULRESSO, our current or future product candidates and any future products, if successfully developed and approved, may cause undesirable side effects that limit their commercial profile; delay or prevent further development or regulatory approval; cause regulatory authorities to require labeling statements, such as boxed warnings or a REMS; or result in other negative consequences.

We may observe undesirable side effects or other potential safety issues in nonclinical studies or in clinical trials at any stage of development of our product candidates. Clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, certain side effects of ZULRESSO, any current or future product candidates, or any future products, if successfully developed and approved, may only be uncovered with a larger number of patients exposed to the product. Those side effects could be serious or life-threatening. If we or others identify undesirable side effects caused by ZULRESSO, any existing or future product candidate or any future approved product:

- regulatory authorities may withdraw or limit their approval of such products;
- the FDA or regulatory authorities outside the U.S. may impose a clinical hold or partial clinical hold prior to the initiation of development or during development of our product candidates which could cause us or our collaborators to have to stop, delay or restrict further development; or we or our collaborators may, even without a clinical hold, decide to interrupt, delay or halt existing non-clinical studies and clinical trials or stop development;
- we may have difficulty enrolling patients in our clinical trials and completing such trials on the timelines we expect or at all, or we may have to conduct additional non-clinical studies or clinical trials as part of a development program;

- if a new drug application, or NDA, for any of our product candidates is reviewed by an advisory committee of the FDA, the advisory committee may recommend against approval of the application or may recommend that the FDA require, as a condition of approval, additional non-clinical studies or clinical trials, limitations on approved labeling or distribution and use restrictions, and the FDA may ultimately agree with the recommendations of the advisory committee;

- we or our collaborators may not be able ultimately to demonstrate, to the satisfaction of the FDA or other regulatory authorities, that our product candidates are safe and that the benefits outweigh the safety risks, and the FDA or applicable foreign regulatory authorities may not approve the product candidate;

- regulatory authorities may require the addition of labeling statements, such as a boxed warning or additions to an existing boxed warning, or a contraindication, including as a result of inclusion in a class of drugs for a particular disease, or may require a REMS, or modifications to an existing REMS;

- we or our collaborators may be required to change the way such products are distributed or administered, conduct post-approval studies or change the labeling of the products;

- we or our collaborators may be subject to regulatory investigations and government enforcement actions;

- we or our collaborators may decide to remove such products from the marketplace;

- we or our collaborators could be sued and held liable for injury caused to individuals exposed to or taking our products or product candidates; and

- our reputation may suffer.

We believe that any of these events could prevent us from achieving or maintaining market acceptance of the affected products, could substantially increase the risks and costs of developing our product candidates or commercializing our products, and could significantly adversely impact our ability and that of our collaborators to successfully develop and commercialize our current product candidates or future products and generate revenues.

Obtaining regulatory approval to market any of our product candidates is a complex, lengthy, expensive and uncertain process, and the FDA and regulatory authorities outside of the U.S. may delay, limit or deny approval of any of our product candidates for many reasons. Any setback or delay in obtaining regulatory approval for our product candidates or in our ability to commence marketing of our products, if approved, may have a material adverse effect on our business and prospects.

We are not permitted to market any of our product candidates in the U.S. until we or our collaborators receive approval of an NDA from the FDA or in any foreign countries until we or our collaborators receive the requisite marketing approval from such countries. Obtaining approval of an NDA in the U.S. or marketing approval in any country outside the U.S. is a complex, lengthy, expensive and uncertain process. The FDA and regulatory authorities outside the U.S. may delay, limit or deny approval of any of our product candidates for many reasons, including, among others:

- we or our collaborators may not be able to demonstrate, to the satisfaction of the FDA or other regulatory authorities, that our product candidates are safe and effective in any indication and that the benefits outweigh the safety risks;

- the results of our non-clinical studies and clinical trials may be negative, or may not meet the level of statistical or clinical significance required by the FDA or regulatory authorities outside the U.S. for marketing approval;

- the FDA or regulatory authorities outside the U.S. may impose a clinical hold or partial clinical hold prior to the initiation of development or during development of our product candidates which could cause us to have to stop, delay or restrict further development;

- the FDA or regulatory authorities outside the U.S. may disagree with our interpretation of data from our non-clinical studies and clinical trials, or may not accept data generated at one or more of our sites conducting non-clinical studies or clinical trials which may cause the study or trial to fail;

- the FDA or regulatory authorities outside the U.S. may determine that the number, design, size, conduct, implementation or result of our non-clinical studies or clinical trials are inadequate for regulatory approval or that changes in dosing or drug formulation used in our non-clinical studies or clinical trials require additional trials or studies, even if the regulatory authorities have previously reviewed and commented on the design and details of our plans;

- the FDA or regulatory or other government authorities outside the U.S. may require that we or our collaborators conduct additional non-clinical studies and clinical trials prior to approval or post-approval;

- the FDA or applicable foreign regulatory authorities may not approve the formulation, labeling or specifications of any of our product candidates;

- if an NDA for any of our product candidates is reviewed by an advisory committee of the FDA, the advisory committee may recommend against approval of the application or may recommend that the FDA require, as a condition of approval, additional non-clinical studies or clinical trials, limitations on approved labeling or distribution and use restrictions, and the FDA may ultimately agree with the recommendations of the advisory committee;

- the FDA or applicable foreign regulatory authorities may approve a product candidate for which we or our collaborators are seeking regulatory approval for a more limited patient population than expected or with substantial use restrictions;

- as was the case with ZULRESSO, the FDA may require a REMS as a condition of approval or post-approval for our product candidates, or may modify an existing REMS;

- the FDA or applicable foreign regulatory authorities may determine that the manufacturing processes or facilities of third-party contract manufacturers with which we contract do not conform to applicable requirements, including current Good Manufacturing Practices, or cGMPs; or

- the FDA or applicable foreign regulatory agencies may change their approval policies or adopt new regulations.

Any of these factors, many of which are beyond our control, could jeopardize or delay our or our collaborators' ability to obtain regulatory approval for and successfully market our product candidates. Even if we or our collaborators receive marketing approval for any of our product candidates, regulatory or other governmental authorities may still impose significant restrictions, including restrictions on the indicated use or marketing, or may impose ongoing requirements for potentially costly post-approval studies. For example, the FDA has imposed post-approval obligations in connection with approval of ZULRESSO. We may not be able to fulfill these obligations in accordance with the FDA's timelines, or at all. The FDA may recommend scheduling with respect to any of our current or future product candidates. In such event, as was the case with ZULRESSO, prior to a product launch, the U.S. Drug Enforcement Administration, or DEA, will need to determine the controlled substance schedule of the product, taking into account the recommendation of the FDA. The timing of the scheduling process is uncertain and may delay our ability to market any product candidate that is successfully developed and approved.

Additionally, disruptions at the FDA and other agencies may slow the time necessary for new drugs to be reviewed and/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, including the FDA, have had to furlough critical employees and stop critical activities. If a prolonged government shutdown occurs in the future, 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.

Fast Track and Breakthrough Therapy designations from the FDA or PRIority Medicines, or PRIME, designation from the European Medicines Agency, or EMA, do not necessarily lead to a faster development pathway or regulatory review process, and do not increase the likelihood of regulatory approval. The FDA may withdraw Fast Track designation or Breakthrough Therapy designation, and the EMA may withdraw PRIME designation, if the relevant agency believes that the designation is no longer supported by data from our clinical development programs.

The COVID-19 pandemic has adversely impacted and may continue to adversely impact our business, including our sales of ZULRESSO and our initiation, conduct and completion of non-clinical studies and clinical trials.

The COVID-19 pandemic in the U.S. has resulted in a significant number of sites of care pausing treatment of new patients with ZULRESSO and potential new sites of care pausing site activation activities. We believe concerns about exposure to the virus have also caused a significant reduction in the number of women with PPD seeking treatment with ZULRESSO and in physicians willing to prescribe it. Given continuing concerns about the COVID-19 pandemic across the country, we expect the significant adverse impact of the pandemic on ZULRESSO revenues to continue. The scope and timing of the expected negative impact will depend on, among other factors, the duration and severity of precautionary measures taken to curb the spread of COVID-19, the length, location and frequency of surges or waves of COVID-19 cases, the timing and extent of use of vaccines for the general population, the impact of the evolving variants of the virus that causes COVID-19 and the timing and success of any return to normal business operations across the U.S. We cannot predict for how long and to what extent the COVID-19 pandemic will have an adverse impact on ZULRESSO sales.

As a result of the COVID-19 pandemic, we may also continue to experience delays or other disruptions that could negatively impact our ongoing and planned development activities, including the timing of initiation and completion of non-clinical studies and clinical trials or the integrity, completeness or usefulness of the data we collect in those studies or trials. These delays and disruptions may include:

- delays or difficulties in recruiting clinical sites and in clinical site initiation, or the diversion of other healthcare resources and personnel, due to prioritization of medical resources to the treatment of COVID-19 patients or as a result of recommended or required precautions or limitations intended to curb the spread of the virus;

- delays or difficulties in enrolling patients in our clinical trials, or an increase in the number of patients who withdraw from our clinical trials prior to completion as a result of concerns about COVID-19 or as a result of recommended or required precautions or limitations intended to curb the spread of the virus, or the potential that patients in our trials may have or contract COVID-19 which may impact the trial results;

- delays or disruptions in non-clinical studies due to precautions taken by contract research organizations or other vendors in light of the spread of COVID-19 or related restrictions recommended or imposed by federal, state or local authorities;

- limitations or modifications to study procedures, the number and type of study visits or data collection or data analysis activities, or other restrictions on other key clinical trial activities such as monitoring and auditing, in response to the COVID-19 pandemic or as a result of restrictions imposed or recommended by federal, state or local governments;

- interruption or delays in the operations of the FDA and comparable foreign regulatory agencies, which may impact timelines for initiation of clinical trials, amendments of protocols, or inspections of manufacturing facilities;

- interruption of, or delays in, availability of supplies of our product candidates if the COVID-19 pandemic continues in surges or recurs in waves for an extended period, including the potential for shortages of raw materials, other drugs or materials used in our clinical trials, including the standard antidepressant therapy being assessed in combination with zuranolone in the CORAL Study, or staff available to our contract manufacturing organizations or other vendors in the supply chain or as the result of restrictions or limitations in their businesses or activities; and

- limitations on employee resources that would otherwise be focused on the conduct of our non-clinical studies and clinical trials, including due to illness or working from home as a result of the COVID-19 pandemic.

The COVID-19 pandemic has also caused economic disruption, which could impair our business prospects. Additionally, the pandemic or the economic distributions from the pandemic may adversely impact the capital markets and make additional capital unavailable to us on acceptable terms, or at all if we were to seek it.

The number of people with the diseases and disorders for which our products and product candidates are targeted may be smaller than we expect or our other assumptions with respect to the potential markets for our products and product candidates may not be correct and the markets may be significantly smaller than we expect.

Our lead product, ZULRESSO, has been approved in the U.S. for the treatment of PPD in adults. We are developing our product candidate, zuranolone, for the treatment of MDD, PPD, and other potential indications. We are developing SAGE-324 as a potential oral therapy for neurological conditions, such as essential tremor, epilepsy and Parkinson's disease. We are exploring SAGE-718 as a potential treatment for certain cognition-related disorders associated with NMDA receptor dysfunction, including cognitive dysfunction associated with diseases such as Huntington's disease, Parkinson's disease and Alzheimer's disease. There is no precise method of establishing the actual number of patients with any of these disorders in any geography over any time period. With respect to PPD, MDD, essential tremor and many of the other indications in which we are developing, or plan to develop, our product candidates, we estimate the prevalence of the disease or disorder, and our estimates as to prevalence, including the assumptions we apply in determining our estimate, may not be accurate. In each case, there is a range of estimates in the published literature and in marketing studies, which include estimates within the range that are lower than our estimates. For example, our estimates of the prevalence of PPD are higher than estimates reported in some of the published literature and results obtained from certain studies analyzing claims databases. We believe these differences may be the result of variations in analytical methodologies and possibly under-diagnosis of PPD as a result of lack of screening and under-reporting and some patients being reluctant to seek treatment in clinical practice. The actual number of patients with PPD, MDD, essential tremor or any other indication in which we elect to pursue development of our product candidates may, however, be significantly lower than we believe. Even if our prevalence estimates are correct, any approved product that we develop may only be indicated for or used by a subset of patients with the relevant disease or disorder. Our assumptions and estimates about the market for ZULRESSO and the potential market for our current and future product candidates may not be accurate. In the event the number of patients with the diseases and disorders we are studying is significantly lower than we expect, we or our collaborators may have difficulties in enrolling patients in our clinical trials which may delay or prevent development of our product candidates. If our prevalence estimates with respect to any indication or our other market assumptions are not accurate, the markets for any approved product for these indications may be smaller than we anticipate, which could limit our revenues and our ability to achieve profitability or to meet our expectations with respect to the level and timing of revenues or profits.

Positive results from non-clinical studies and clinical trials of our product candidates are not necessarily predictive of the results of later non-clinical studies and clinical trials of our product candidates in the same indications or other indications. Interim results from non-clinical studies and clinical trials may not be predictive of results of such non-

clinical studies or clinical trials once completed. If we cannot replicate the positive results from our earlier non-clinical studies and clinical trials of our product candidates in our later non-clinical studies and clinical trials in the same indications or other indications, or we cannot replicate our interim results in our completed non-clinical studies and clinical trials, we may be unable to successfully develop, obtain regulatory approval for and commercialize our product candidates.

Positive results from non-clinical studies and clinical trials of our product candidates may not necessarily be predictive of the results we or our collaborators may obtain from subsequent non-clinical studies or clinical trials using the same product candidate or other product candidates. For example, unlike earlier trials of zuranolone in MDD and PPD, the Phase 3 MOUNTAIN Study evaluating zuranolone in patients with MDD did not meet its primary endpoint. We or our collaborators may find that ongoing or future clinical trials of zuranolone or any of our other product candidates may also fail to meet their primary endpoints. Similarly, we are studying brexanolone in the treatment of advanced COVID-19-related acute respiratory distress syndrome, or ARDS, in a Phase 3 clinical trial based on our analysis of earlier preclinical data and clinical data from a different indication. There is no guarantee that brexanolone will be able to mitigate the morbidity and mortality associated with advanced COVID-19-related ARDS. Similarly, interim results from non-clinical studies and clinical trials may not be predictive of results of a non-clinical study or clinical trial once completed.

We or our collaborators may also observe safety issues in clinical trials or non-clinical studies of our product candidates that we or they did not observe or appreciate in earlier stage clinical studies or non-clinical studies, or a different rate or severity of events, including as a result of an increase in dosing, studying a different patient population or different indication than previously studied, or administering a product candidate with a concomitant medication. For example, as part of ongoing clinical development efforts, we are currently evaluating a 50 mg dose in our pivotal Phase 3 clinical trials for zuranolone. This dose is expected to achieve higher patient exposures than those observed in patients in earlier clinical trials of zuranolone. We are also evaluating a higher dose of SAGE-324 in our Phase 2 clinical trial in essential tremor than we studied in our earlier exploratory study in this disease. These studies may result in unexpected adverse events or raise other safety issues or may otherwise generate negative results.

The results from non-clinical animal models may not be replicated in clinical trials. Many product candidates, including many targeting central nervous system disorders, with promising non-clinical profiles have failed to demonstrate similar safety, non-toxicity and efficacy in humans.

Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later-stage clinical trials after achieving positive results in earlier-stage development, and we cannot be certain that we will not face similar setbacks. Many drugs have failed to replicate efficacy and safety results in larger or more complex later stage trials. Moreover, non-clinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that believed their product candidates performed satisfactorily in non-clinical studies and clinical trials nonetheless failed to obtain FDA approval. If we or our collaborators fail to produce positive results in our ongoing and planned non-clinical studies or clinical trials of any of our product candidates, the development timeline and regulatory approval and commercialization prospects for our product candidates, and, correspondingly, our business and financial prospects, would be materially adversely affected.

Failures or delays in the commencement or completion of our ongoing and planned clinical trials of our current and future product candidates could cause us not to meet our expected timelines or result in increased costs to us, and could delay, prevent or limit our ability to gain regulatory approval of any such product candidate and to generate revenue from resulting products, if any.

Successful completion of clinical trials at each applicable stage of development is a prerequisite to submitting an NDA to the FDA or equivalent filings outside the U.S. and, consequently, the ultimate approval and commercial marketing of any of our product candidates for the indications in which we develop them. We do not know whether any of our ongoing clinical trials will be completed, and results announced, or whether future trials will begin, as planned or expected, if at all, as the commencement and completion of clinical trials and announcement of results can be delayed or prevented for a number of reasons, including, among others:

- denial by the FDA or other regulatory authority of permission to proceed with our planned clinical trials or any other clinical trials we may initiate, or placement of one or more clinical trials on full or partial clinical hold;
- delay or inability to satisfy the requirements of the FDA to commence clinical trials, including chemistry, manufacturing and control, or CMC, requirements, or to file or receive approvals of additional investigational new drug applications, or INDs, that may be required;
- negative or inconclusive results from our ongoing non-clinical studies or clinical trials;
- challenges in identifying, recruiting, enrolling and retaining patients to participate in clinical trials;
- the impact of the COVID-19 pandemic;
- delays in reaching or failing to reach agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- inadequate quantity or quality of supplies of a product candidate or other materials necessary to conduct clinical trials;
- difficulties obtaining Institutional Review Board, or IRB, approval, and equivalent approval for sites outside the U.S., to conduct a clinical trial at a prospective site or sites;
- delays or problems in analyzing data, or the need for additional analysis or data or the need to enroll additional patients;
- the occurrence of serious adverse events or unexpected drug-related side effects experienced by patients in a clinical trial or unexpected results in ongoing non-clinical studies;
- delays in validating endpoints utilized in a clinical trial;
- the FDA or applicable regulatory authorities outside the U.S. disagreeing with our clinical trial design and our interpretation of data from clinical trials, or changing the requirements for approval even after the regulatory authority has reviewed and commented on the design for our clinical trials; and
- reports from non-clinical or clinical testing of other therapies that raise safety or efficacy concerns.

In addition, a clinical trial may be suspended or terminated by us, the FDA or other regulatory authorities, the IRB or Ethics Committee, or EC, at the sites where the IRBs or ECs are overseeing a clinical trial, or recommended for termination or suspension by a data and safety monitoring board overseeing the clinical trial at issue or other regulatory authorities due to a number of factors, including, among others:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities that reveals deficiencies or violations that require us to undertake corrective action, including the imposition of a partial or full clinical hold;
- unforeseen safety issues, including any that could be identified in our ongoing non-clinical studies, or adverse side effects or lack of effectiveness identified in ongoing clinical trials;

- changes in government regulations or administrative actions; and
- problems with clinical supply materials.

Additionally, changes in regulatory requirements or guidance or unanticipated events during our non-clinical studies and clinical trials may force us or our collaborators to amend non-clinical studies and clinical trial protocols or the applicable regulatory authorities may impose additional non-clinical studies and clinical trial requirements. Amendments or changes to clinical trial protocols would require resubmission to the FDA and IRBs for review and approval, which may adversely impact the cost, timing or successful completion of clinical trials. If we or our collaborators experience delays completing, or if we or our collaborators terminate, any of our non-clinical studies or clinical trials, or if we or our collaborators 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 or our collaborators may never seek or receive regulatory approval to market any of our products or product candidates outside of the U.S., or receive pricing and reimbursement outside the U.S. at acceptable levels.

We or our collaborators may not seek, or may seek but never receive, regulatory approval to market our products or product candidates outside of the U.S. or in any particular country or region. In order to market any product outside of the U.S., we or our collaborators must establish and comply with the numerous and varying safety, efficacy and other regulatory requirements of other countries. Approval procedures vary among countries and can involve additional non-clinical studies or clinical trials, additional work related to manufacturing and analytical testing on controls, and additional administrative review periods. The time required to obtain approvals in other countries might differ from that required to obtain FDA approval. Marketing approval in one country does not ensure marketing approval in another, but a failure or delay in obtaining marketing approval in one country may have a negative effect on the regulatory process in other countries. The marketing approval processes in other countries may implicate all of the risks detailed above regarding FDA approval in the U.S. as well as other risks. In particular, in many countries outside of the U.S., products must receive pricing and reimbursement approval before the product can be commercialized. Obtaining this approval may require additional studies and data, and can result in substantial delays in bringing products to market in such countries and such investment may not be justified from a business standpoint given the market opportunity or level of required investment. Even if we or our collaborators generate the data and information which we believe may be sufficient to file an application for regulatory approval of any of our products or product candidates in a region or country outside the U.S., the relevant regulatory agency may find that we did not meet the requirements for approval, or even if our application is approved, we may have significant post-approval obligations.

Even if we or our collaborators are able to successfully develop our product candidates and obtain marketing approval in a country outside the U.S., we or they may not be able to obtain pricing and reimbursement approvals in such country at acceptable levels or at all, and any pricing and reimbursement approval we or they may obtain may be subject to onerous restrictions such as caps, rebates or other hurdles or restrictions on reimbursement. Failure to obtain marketing and pricing approval in countries outside the U.S. without onerous restrictions or limitations related to pricing, or any delay or other setback in obtaining such approval, would impair our ability or that of our collaborators to market our product candidates successfully or at all in such foreign markets. Any such impairment would reduce the size of our potential market or revenue potential, which could have a material adverse impact on our business, results of operations and prospects.

Any setback or delay in obtaining regulatory approval or commencing marketing, if approved, for our product candidates in a country or region outside the U.S. where we or our collaborators have decided it makes business sense to proceed may have a material adverse effect on our business and prospects.

We rely, and expect that we will continue to rely, on third parties to conduct any clinical trials for our product candidates. If these third parties do not successfully carry out their contractual duties, comply with applicable

standards and meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our products, if approved, and our business could be substantially harmed.

We do not have the ability to independently conduct clinical trials. We rely on medical institutions, clinical investigators, contract laboratories and other third parties, such as CROs, to conduct clinical trials of our product candidates. We enter into agreements with third-party CROs to provide monitors for and to manage data for our ongoing clinical trials. We rely heavily on these parties for execution of clinical trials for our product candidates and control only certain aspects of their activities. As a result, we have less direct control over the conduct, timing and completion of these clinical trials and the management of data developed through clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- fail to comply with current Good Clinical Practices, or GCPs, or experience other regulatory compliance issues;
- undergo changes in priorities or become financially distressed;
- form relationships with other entities, some of which may be our competitors; or
- be impacted by the COVID-19 pandemic in ways that adversely affect our business.

These factors may materially adversely affect the willingness or ability of third parties to conduct our clinical trials, and may subject us to unexpected cost increases that are beyond our control. Nevertheless, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol, legal and regulatory requirements, and scientific standards, and our reliance on CROs does not relieve us of our regulatory responsibilities. We, clinical investigators, and our CROs are required to comply with regulations and guidelines, including GCPs, for conducting, monitoring, recording and reporting the results of clinical trials to ensure that the data and results are scientifically credible and accurate, and that the trial patients are adequately informed of the potential risks of participating in clinical trials. These regulations are enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area, or EEA, and comparable foreign regulatory authorities for any product candidates in clinical development or where clinical trials are being conducted. If we or our CROs or contract manufacturers fail to comply with these regulations or if the quality or accuracy of the clinical data obtained is compromised due to the failure to adhere to our clinical protocols or other regulatory requirements or for other reasons, and we are unable to rely on clinical data collected, we may be required to repeat clinical trials or extend the duration of, or increase the size of our clinical trials. This would delay the regulatory approval process, and could also subject us to enforcement action up to and including civil and criminal penalties. If any of our relationships with third-party CROs terminate or if a CRO needs to be replaced, we may not be able to enter into arrangements with alternative CROs in a timely manner or at all. Any of these issues could significantly delay or prevent regulatory approval of our product candidates and require significantly greater expenditures. In such an event, we believe that our financial results might be harmed, our costs could increase and our ability to generate revenue from products beyond ZULRESSO could be delayed.

We rely completely on third-party suppliers to manufacture commercial supplies of ZULRESSO and clinical drug supplies for our product candidates, and we intend to rely on third parties to produce non-clinical, clinical and commercial supplies of our approved products and product candidates in the future.

We do not currently have, nor do we plan to acquire or develop, the infrastructure or capability internally to manufacture supplies of ZULRESSO for commercial use, or of any of our other existing or future product candidates, for use in the conduct of our clinical trials and non-clinical studies or for future commercial use, and we rely completely on third-party suppliers for both active drug substances and finished drug products.

We rely on our contract manufacturers for commercial supplies of active drug substance, finished drug product and packaged and labeled product with respect to ZULRESSO. We also rely on our contract manufacturers to manufacture sufficient quantities of zuranolone, SAGE-324, SAGE-718, SAGE-689, SAGE-904 and our other product candidates for ongoing and planned clinical trials and non-clinical studies and expect to rely on them to scale our manufacturing processes for future clinical trials, if our development efforts are successful. We expect our contract manufacturers to comply with cGMPs in the manufacture of our products. The facilities used by our contract manufacturers to manufacture the active pharmaceutical ingredient and final drug product must typically complete a pre-approval inspection by the FDA and other comparable foreign regulatory agencies to assess compliance with applicable requirements, including cGMPs, after we submit the relevant NDA or equivalent foreign regulatory submission to the applicable regulatory agency. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or applicable foreign regulatory agencies, and pass regulatory inspections, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities with respect to our products. In addition, we have no direct control over our contract manufacturers' ability to maintain adequate quality control, quality assurance and qualified personnel. Furthermore, all of our third-party contract manufacturers are engaged with other companies to supply and/or manufacture materials or products for such companies, which exposes our third-party contract manufacturers to regulatory risks for the production of such materials and products. As a result, failure to satisfy the regulatory requirements for the production of those materials and products may affect the regulatory clearance of our contract manufacturers' facilities generally. If the FDA or an applicable foreign regulatory agency determines now or in the future that these facilities for the manufacture of our products and product candidates are noncompliant, we may need to find alternative manufacturing facilities, which would significantly adversely delay or impact our commercialization efforts for any approved product and our ability to develop and obtain regulatory approval for our product candidates. Our reliance on contract manufacturers also exposes us to the possibility that they, or third parties with access to their facilities, will have access to and may appropriate our trade secrets or other proprietary information. Also, if a natural disaster were to interrupt or halt production of our drug substance or drug product at one of our third-party contract manufacturers, or cause the loss of batches, we could encounter a supply shortage or face significant costs to rebuild our supply.

We have long-term supply agreements with our contract manufacturers with respect to ZULRESSO drug substance and drug product. We have an inventory of ZULRESSO drug product and drug substance in place to help mitigate any potential supply risks, but there is no guarantee that this inventory will be adequate. We do not yet have long-term supply agreements in place with our contract manufacturers with respect to drug substance or drug product for any of our product candidates. Each batch of drug substance and drug product for our product candidates is individually contracted through a purchase order governed by our master service and quality agreements. If our existing contract manufacturers for our other product candidates are not willing to enter into long-term supply agreements, or are not willing or are unable to supply drug substance or drug product to us, we could be required to engage new contract manufacturers who would need to scale up the manufacturing process before we would be able to use the drug product or drug substance they manufacture for clinical trials. In addition, in such event, any such contract manufacturer would need to complete validation batches, pass an inspection by the FDA and other applicable foreign regulatory agencies, and be approved by regulatory authorities as our manufacturer before we would be able to use drug product or drug substance they manufacture for commercial purposes, which could result in significant delays or gaps in product availability. We plan to continue to rely upon contract manufacturers to manufacture commercial quantities of our products, if approved. If we are unable to maintain arrangements for third-party manufacturing, or are unable to do so on commercially reasonable terms, or are unable to obtain timely regulatory approvals in connection with our contract manufacturers, we may not be able to successfully commercialize any approved product or successfully complete development of our current or future product candidates.

ZULRESSO or any future product, if our ongoing development efforts are successful, may not achieve broad market acceptance or reimbursement at sufficient levels, which would limit the revenue that we generate from its sales.

The commercial success of ZULRESSO or of any of our current or future product candidates, if successfully developed and approved by the FDA or other applicable regulatory authorities, will depend upon the awareness and

acceptance among the medical community, including physicians, patients and healthcare payors, and reimbursement at sufficient levels.

The availability of coverage and adequacy of reimbursement is essential for most patients to be able to access and afford treatments. Patients who are prescribed medications for the treatment of their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their prescription drugs. Government authorities, including the Centers for Medicare and Medicaid Services, or CMS, an agency within the Department of Health and Human Services, or HHS, in the U.S., and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels for those medications. Cost containment is a primary concern in the U.S. healthcare industry and elsewhere. Government authorities and these third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Payors may adopt restrictions on coverage such as requiring patients to try other lower cost therapies prior to being prescribed our product, requiring patients to meet severity or other criteria more restrictive than the approved label for our product, or requiring onerous and time-consuming prior authorization procedures, or they may limit the amount of reimbursement. These restrictions or limitations might impede appropriate use of our product for the approved indication. Restrictions and limitations on reimbursement or delays in obtaining coverage may vary significantly among payors and payor types. As a result, there is significant uncertainty related to third-party payor coverage and reimbursement of approved drugs. Regulatory approvals, pricing and reimbursement for drug products vary widely from country to country. Coverage and reimbursement by a third-party payor may depend upon a number of factors, including the third-party payor's determination that use of a 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.

The inability of us or our collaborators to promptly obtain and maintain coverage and adequate reimbursement rates from both government-funded and private payors for ZULRESSO and any other approved products that we develop could have a material adverse effect on our operating results, our ability to successfully commercialize our products, our ability to raise capital and our overall financial condition. Even if coverage is provided, we may not be able to establish or maintain pricing sufficient to realize a sufficient return on our investment.

Obtaining coverage and reimbursement approval for a product from a government or other third-party payor can be an expensive and time-consuming process that could require us to provide supporting scientific, clinical and cost effectiveness data for the use of our products to the payor. For example, the availability, terms and timing of coverage for ZULRESSO varies from payor to payor, both for commercially insured patients and from state Medicaid systems, and we have encountered some states that impose significant coverage restrictions or lengthy delays on reimbursement of ZULRESSO. As a result, certain healthcare settings will not treat Medicaid patients with ZULRESSO even if they are active treating sites of care for ZULRESSO. The industry competition to be included in third-party payors' drug formularies, or lists of medications for which third-party payors provide coverage and reimbursement, often leads to downward pricing pressures on pharmaceutical products. In addition, third-party payors may refuse to include a particular branded drug in their formularies or otherwise restrict patient access to a branded drug when a less costly generic equivalent or other alternative is available. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors, and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the U.S. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. In addition, many pharmaceutical manufacturers must calculate and report certain price reporting metrics to the government, such as average sales price and best price. Penalties may apply when such metrics are not submitted accurately and on a timely basis. Before granting reimbursement approval, payors may require us to demonstrate that our product candidates, in addition to treating the target indications, also provide incremental health benefits to patients or healthcare costs savings. We cannot be sure that adequate coverage or reimbursement will be available for any product candidate that we or our collaborators commercialize.

Market acceptance will depend on a number of factors, including, among others:

- the efficacy and safety of our products as demonstrated in clinical trials;

- the potential and perceived advantages and limitations of our products over current or future alternative treatment options, including in the case of ZULRESSO, the impact of limitations arising from the intravenous infusion mode of administration, the length of stay required for treatment, restrictions on site of care to REMS certified healthcare settings and other requirements of the REMS, the risk of excessive sedation and loss of consciousness during administration, and the availability of lower cost antidepressants;
- the incidence and severity of any side effects of the products;
- limitations or warnings contained in the labeling approved for our products by the FDA or other applicable regulatory authorities;
- the clinical indications and size of patient populations for which our products are approved;
- the convenience, benefit, ease and availability of alternative treatments already approved or expected to be commercially launched in the near future;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies, and our ability to increase awareness of our approved products through marketing efforts;
- the strength and effectiveness of our sales, marketing and distribution strategies and support or that of our collaborators;
- publicity concerning our products or competing products and treatments;
- pricing and cost effectiveness; or
- the availability of sufficient third-party coverage or reimbursement, and the willingness of patients to pay out-of-pocket in the absence of such coverage or reimbursement, including in the case of ZULRESSO for both the product and the cost of the infusion.

Our efforts to change the treatment paradigm for a given disorder or to educate the medical community and third-party payors about the benefits of any current or future products, to the extent permitted, may require significant resources and may never be successful. If ZULRESSO, or any of our product candidates that may be approved in the future, do not achieve an adequate level of acceptance by patients, physicians, healthcare settings and payors, or reimbursement at reasonable levels, or if the patient population for which any such product is approved is smaller than we expect, we may not generate sufficient revenue from our products to become or remain profitable or may not do so on the timelines we expect.

Even after marketing approval of a product, we face significant post-marketing obligations and future development and regulatory difficulties.

Regulatory authorities may impose significant and potentially costly post-marketing obligations with respect to approval of any product, including post-marketing studies, additional CMC work and additional pediatric studies. For example, the FDA has imposed post-marketing commitments with respect to approval of ZULRESSO, and we may encounter issues or delays in the conduct of these post-marketing commitments or we may generate unexpected results.

In the event we or our collaborators elect, or are required, to proceed with pediatric studies of any of our product candidates in any indication, regulatory authorities may also require additional non-clinical studies or clinical trials be completed prior to commencement of such pediatric studies.

As was the case with brexanolone, the FDA may recommend controlled substance scheduling for our current or future product candidates, if approved. In such event, the DEA will need to determine the controlled substance schedule

taking into account the recommendation of the FDA. If products are determined to be controlled substances, the manufacturing, shipping, storing, selling and using of the products will be subject to an additional regulation. Distribution, prescribing and dispensing of these drugs are also regulated. Because of their restrictive nature, these laws and regulations could limit commercialization of our product candidates containing controlled substances. Failure to comply with these laws and regulations could also result in withdrawal of our DEA registrations, disruption in manufacturing and distribution activities, consent decrees, criminal and civil penalties and state actions, among other consequences. The DEA regulates controlled substances as Schedule I, II, III, IV or V substances. Schedule I substances by definition have no established medicinal use, and may not be marketed or sold in the U.S. A pharmaceutical product may be listed as Schedule II, III, IV or V, with Schedule II substances considered to present the highest risk of abuse and Schedule V substances the lowest relative risk of abuse among such substances. Brexanolone is currently regulated as a Schedule IV controlled substance. Other Schedule IV controlled substances include sedative hypnotics such as benzodiazepines.

ZULRESSO is, and any future approved products will also be, subject to ongoing FDA requirements governing the labeling, packaging, storage and promotion of the product and record-keeping and submission of safety and other post-market information. The FDA has significant post-marketing authority, including, for example, the authority to require labeling changes based on new safety information and to require post-marketing studies or clinical trials to evaluate serious safety risks, safety and efficacy in pediatric populations or alternate doses or dose regimens.

The FDA also has the authority to require, as part of an NDA or post-approval, the submission of a REMS. For example, the FDA has required a REMS for ZULRESSO. Any REMS required by the FDA may lead to increased costs to assure compliance with the REMS and with additional post-approval regulatory requirements and potential requirements or restrictions on the sale of approved products, all of which could lead to lower sales volume and revenue. In addition, if we are unable to comply with the ZULRESSO REMS or any REMS imposed for a future product, we may face additional restrictions, limitations or substantial penalties, any of which may materially adversely affect our business and results of operations.

We, our collaborators and the third-party manufacturers of our drug substance and drug products and our respective facilities are subject to extensive regulations in the manufacture of our products and product candidates, including GMP, and are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with GMPs and other regulations. If we, our collaborators or a regulatory agency discover problems with our approved products or product candidates such as poor control of production processes or other problems with the facility where our products are manufactured or in the manufacturing process, introduction of contaminants, or adverse events of unanticipated severity or frequency, a regulatory agency may impose restrictions on our products, the manufacturer or us or our collaborators, including requiring withdrawal of such products from the market or suspension of manufacturing. If we, our collaborators, our approved products, our product candidates, or the manufacturers for our products or product candidates fail to comply with applicable regulatory requirements, a regulatory agency may, among other things:

- issue warning letters or untitled letters;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw marketing approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications submitted by us;
- suspend or impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products, refuse to permit the import or export of products, or require that we initiate a product recall.

Competing therapies may exist or could emerge that adversely affect the amount of revenue we are able to generate from the sale of ZULRESSO or any of our current or future product candidates, if successfully developed and approved.

The biopharmaceuticals industry is highly competitive. There are many public and private companies, universities, governmental agencies and other research organizations actively engaged in the research and development of products that may be similar to our products or product candidates or address similar markets. It is probable that the number of companies seeking to develop products and therapies similar to our products will increase. Many of our potential competitors, alone or with their strategic partners, have substantially greater financial, technical and human resources than we do, and significantly greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of treatments and the commercialization of those treatments. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. We expect competition in the indications we are pursuing will focus on efficacy, safety, convenience, availability, and price. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are perceived to be safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market.

Currently, there are no pharmacological therapies specifically approved for the treatment of PPD other than ZULRESSO. Current standard of care for PPD commonly consists of psychotherapy; however, patients with moderate or severe PPD are often prescribed antidepressant medications such as selective serotonin reuptake inhibitors, or SSRIs, and serotonin and norepinephrine reuptake inhibitors, or SNRIs.

Our most advanced development candidate, zuranolone, is in Phase 3 development for MDD and PPD. Patients with MDD are typically treated with a variety of antidepressant medications, including SSRIs and SNRIs. If successfully developed and approved, zuranolone may also face competition from esketamine, which is approved in the treatment of treatment resistant depression. A number of companies are developing product candidates intended for the treatment of MDD, including NMDA receptor antagonists or partial antagonists such as dextromethorphan/ bupropion. In November 2020, Axsome Therapeutics, Inc. announced that it expected to file its NDA for its NMDA receptor antagonist, AXS-05, in January 2021. In addition, if zuranolone is successfully developed and approved for PPD, it could reduce our commercial opportunity for ZULRESSO.

In the field of neuroactive steroids focused specifically on modulation of GABAA receptors, we also face competition from a number of companies, including Marinus Pharmaceuticals, Inc., or Marinus, and Praxis Precision Medicines, or Praxis. Marinus is developing a form of ganaxolone, a known GABAA positive allosteric modulator neuroactive steroid, that is in Phase 3 trials in patients with status epilepticus and CDLK5 deficiency disorder. Praxis is developing PRAX-114, a GABAA receptor modulating neuroactive steroid, for MDD and is currently reported as being in Phase 2/3 development.

SAGE-324, a novel GABAA receptor positive allosteric modulator, is in Phase 2 development in essential tremor. If successfully developed and approved, SAGE-324 may face competition from a Phase 2b-ready T-type calcium channel modulator in development for essential tremor by Jazz Pharmaceuticals, Inc.

A number of companies are working to develop products targeted at the NMDA receptor, both antagonists and agonists. Aptinyx Inc. has multiple Phase 2 NMDA receptor modulators in development for multiple indications, including NYX-458 for the treatment of cognitive impairment in Parkinson's disease.

We have existing collaborations, and may seek to establish additional collaborations, related to our development and commercialization of product candidates. Our existing and future collaborations, if any, may not lead to the successful development or commercialization of product candidates. If we determine that future collaborations are important to our business, and we are not able to establish future collaborations on commercially reasonable terms, we may have to alter our development and commercialization plans or expand our internal efforts and growth.

Our drug development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. For some of our product candidates, we may decide to collaborate with pharmaceutical and biotechnology companies for the development and potential commercialization of those product candidates in some or all markets.

Our existing and future collaborations, if any, may not lead to the successful development and commercialization of any products. Our collaborators face both the same challenges and hurdles that we would face in the development and commercialization of product candidates if we were engaged in the activities ourselves, as well as additional challenges related to operating under a collaboration. For example, we have entered into a collaboration agreement with Biogen MA Inc., or BIMA, and Biogen International GmbH, or, collectively with BIMA, Biogen, to jointly develop and commercialize zuranolone and SAGE-324 in the U.S. and granting Biogen rights to develop and commercialize those product candidates in the rest of the world other than Japan, Taiwan and South Korea, or the Existing Partner Territory, in the case of zuranolone. We have a separate collaboration with Shionogi & Co., Ltd., or Shionogi, under which we granted rights to Shionogi for the development and commercialization of zuranolone in the Existing Partner Territory. The efforts under these collaborations may not be successful and we may never receive any additional milestone payments, profit-share revenue or royalty payments from Biogen or Shionogi. In addition, under most collaborations, a certain degree of control in decision-making is transferred to or shared with our collaborators in these efforts which may lead to decisions that hamper our overall development and commercialization activities. Our collaborators may face competing priorities or different incentives that divert resources away from our collaboration; may independently develop, or develop with a competitor, competitive products; or may believe that product candidates being evaluated in the collaboration could be competitive with the collaborator's own products. In the case of the collaboration with Biogen, both companies have agreed to certain exclusivity provisions in specified indications which may limit certain development opportunities outside the collaboration. In addition, if we depend on collaborators for capabilities and funding for major product development efforts globally or in key territories then our business may be adversely affected if the collaboration terminates or if our collaborator fails to perform its obligations under the agreement. Disputes may also arise with respect to the ownership of rights to technology or products developed with collaborators, which could have an adverse effect on our ability to develop and commercialize any affected product candidate.

Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators. We may not be able to negotiate additional collaborations on a timely basis, on acceptable terms, or at all.

We may not be successful in our efforts to identify or discover additional product candidates beyond our existing product candidates or to file investigational new drug, or IND, applications for clinical development of new compounds at the rate we expect, or we may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

The success of our business depends upon our and our collaborators' ability to successfully develop, gain approval of and commercialize products based on our current product candidates and on our ability to generate new compounds for development in the future and to successfully complete the non-clinical work necessary to file INDs to pursue clinical development of such new compounds. Our research programs may fail to generate new compounds that meet the standards for non-clinical development, and, if even we are successful in generating such compounds, we may not be able to produce the non-clinical and other data necessary to support IND applications for clinical development, in each case in the number or at the rate we expect or at all for a number of reasons. For example, we may not be able to identify a sufficient number of new targets in areas of interest to us. Our research methodology may be unsuccessful in generating a sufficient number of new compounds appropriate for non-clinical testing in the target areas we identify. Even if we generate new compounds in areas of interest to us, we may determine that those compounds are not appropriate for non-clinical development or we may generate data in non-clinical development that do not support IND filings for clinical development. We may not have, or devote, sufficient technical, financial, and human resources to our research efforts at the various stages needed to identify targets, generate compounds, conduct non-clinical studies and

prepare INDs. Additional potential product candidates may be shown to have harmful side effects or may not have a positive risk/benefit profile or may have other characteristics that may make the product candidates not appropriate for further development or unlikely to receive marketing approval.

Because we have limited financial and management resources, we focus on a limited number of clinical and research programs and product candidates and are currently focused on certain brain health disorders. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Research programs to identify new product candidates require substantial technical, financial and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful and may not yield any commercially viable drugs. Our resource allocation decisions may cause us to fail to capitalize on other viable opportunities. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights through future collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain such sole development and commercialization rights. If any of these events occur, it may have a material adverse effect on our business.

If our development efforts related to our current and future product candidates are successful, we may need to develop and expand our company, and we may encounter difficulties in managing this development and expansion, which could disrupt our operations.

Given the complexity and level of activities and resources that may be necessary to potentially commercialize future products, if our development efforts are successful, we may in the future need to increase our number of employees and the scope of our operations. For example, if we are ultimately successful in our development efforts with respect to our product candidates, we will need to recruit and train additional qualified personnel, and continue to implement and improve our managerial, operational and financial systems. We may not be able to effectively manage any expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure and give rise to operational mistakes or delays, loss of business opportunities, loss of employees and reduced productivity among remaining employees. If our management is unable to effectively manage any potential expansion, our expenses may increase more than expected, and our ability to successfully develop and gain regulatory approval of our product candidates and generate or increase our revenue, if such product candidates are approved, could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize any future products that we successfully develop, and to compete effectively will depend, in part, on our ability to effectively manage the potential future expansion of our company.

Our future success depends on our ability to attract, retain and motivate qualified personnel.

To accomplish our objectives, we require a strong management team with expertise in research and development, clinical development and commercialization. Although we have entered into employment agreements with each of our executive officers, each of them is employed “at will” and may terminate his or her employment with us at any time. We do not maintain “key person” insurance for any of our executives or other employees. Recruiting and retaining qualified personnel is critical to our success. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific personnel from universities and research institutions. Failure to succeed in clinical trials or in obtaining regulatory approval may make it more challenging to recruit and retain qualified personnel. If we are unable to continue to attract and retain high quality personnel, our business, financial condition, results of operations and growth prospects could be adversely affected.

We face potential product liability exposure, and, if claims are brought against us, we may incur substantial liability.

The sale of ZULRESSO and any future approved products and use of our product candidates in clinical trials will expose us to the risk of product liability claims. Product liability claims might be brought against us by patients,

healthcare providers or others using, prescribing, selling or otherwise coming into contact with our products and product candidates. For example, we may be sued if any product or product candidate allegedly causes injury or is found to be otherwise unsuitable during clinical trials, manufacturing, marketing, sale or commercial use. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, including as a result of interactions with alcohol or other drugs, knowledge of risks, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection laws. If we become subject to product liability claims and cannot successfully defend ourselves against them, we could incur substantial liabilities. Regardless of merit or eventual outcome, product liability claims may result in, among other things:

- withdrawal of patients from our clinical trials, or difficulty in enrolling clinical trials;
- substantial monetary awards to patients or other claimants;
- decreased demand for our approved products;
- damage to our reputation and exposure to adverse publicity;
- increased FDA warnings on product labels;
- litigation costs;
- distraction of management's attention from our primary business;
- loss of revenue; and
- withdrawal of products from the market or our inability to successfully gain approval of product candidates.

We maintain product liability insurance coverage with a $20.0 million annual aggregate coverage limit. Nevertheless, our insurance coverage may be insufficient to reimburse us for any expenses or losses we may suffer. Moreover, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses, including if insurance coverage becomes increasingly expensive. Large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. The cost of any product liability litigation or other proceedings, even if resolved in our favor, could be substantial, particularly in light of the size of our business and financial resources. A product liability claim or series of claims brought against us could cause our stock price to decline and, if we are unsuccessful in defending such a claim or claims and the resulting judgments exceed our insurance coverage, our financial condition, business and prospects could be materially adversely affected.

If we fail to comply with our reporting and payment obligations under the Medicaid Drug Rebate Program or other governmental pricing programs, we could be subject to additional reimbursement requirements, penalties, sanctions and fines, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

The Medicaid Drug Rebate Program, which we participate in, and other governmental programs impose obligations to report pricing figures to the federal government, require us to pay rebates and participate in discount programs. Other programs impose limits on the price we are permitted to charge certain entities for ZULRESSO or for any future products for which we receive regulatory approval. Statutory and regulatory changes or binding guidance regarding these programs and their requirements could negatively affect the coverage and reimbursement by these programs of ZULRESSO or any future products for which we receive regulatory approval and could negatively impact our results of operations. Our failure to comply with these price reporting and rebate payment obligations could negatively impact our financial results. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, collectively referred to herein as the ACA, and regulations promulgated thereunder could affect our obligations in ways we cannot anticipate.

Pricing and rebate calculations vary among products and programs. The calculations are complex and are often subject to interpretation by us, governmental or regulatory agencies and the courts. If we become obligated to restate or recalculate the amounts we report under these programs, our costs for complying with the laws and regulations governing the Medicaid Drug Rebate Program and our price discounts and rebates could be increased. Additionally, we could be held liable for errors associated with our submission of pricing data under the Medicaid Drug Rebate Program and other federal or state drug pricing programs, including retroactive rebates and program refunds, and if we are found to have knowingly submitted false average manufacturer price or best price information to the government, civil monetary penalties per item of false information. Certain failures to submit required data could result in a civil monetary penalty for each day the information is late beyond the due date and be grounds for CMS to terminate our Medicaid drug rebate agreement, pursuant to which we participate in the Medicaid program. In the event that CMS terminates our rebate agreement, no federal payments would be available under Medicaid or Medicare Part B for our covered outpatient drugs.

We are subject to other laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

We are subject to a number of healthcare and other statutory and regulatory requirements and enforcement by the federal government and the states and foreign governments in which we conduct our business.

Our current or future interactions and arrangements with third-party payors, healthcare providers, patients, healthcare settings, and others who play a role in the recommendation, prescription, reimbursement and administration of ZULRESSO and will play similar role with respect to any of our future products, if successfully developed and approved, are governed in part by broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute ZULRESSO or expect to market, sell and distribute any future approved products. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- The federal anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly (including any kickback, bribe or certain rebate), in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal healthcare programs such as Medicare and Medicaid. This statute has been interpreted to apply to arrangements between pharmaceutical companies on the one hand, and prescribers, purchasers and formulary managers, among others, on the other.

- The federal False Claims Act imposes criminal and civil penalties, including those from civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease, or conceal an obligation to pay money to the federal government, with potential liability including mandatory treble damages and significant per-claim penalties. Pharmaceutical companies have been prosecuted under the False Claims Act in connection with their alleged off-label promotion of drugs, purportedly concealing price concessions in the pricing information submitted to the government for government price reporting purposes, and allegedly providing free product to customers with the expectation that the customers would bill federal health care programs for the product, among other activities. In addition, the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

- The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program and also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information.

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and its implementing regulations, imposes privacy, security and breach reporting obligations, including

mandatory contractual terms, with respect to safeguarding the privacy and security of individually identifiable health information upon covered entities subject to the rule.

- The federal false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services.

- The federal transparency requirements, sometimes referred to as the "Sunshine Act", under the ACA, require manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program to report to HHS information related to physician payments and other transfers of value made to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made to certain non-physician providers such as physician assistants and nurse practitioners.

- Analogous state laws and regulations, such as state anti-kickback and false claims laws and transparency laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures and drug pricing.

- Various federal and state health information and data protection laws and regulations, and similar types of laws outside the U.S., govern the collection, use, disclosure and protection of health-related and other personal information by us and our collaborators.

Ensuring that our future practices and business arrangements comply with applicable healthcare laws and regulations is costly. It is possible that governmental authorities will conclude that our business practices and arrangements do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our practices or operations, including activities conducted by our commercial team or other of our employees, consultants or vendors, were found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines and exclusion from government funded healthcare programs, such as Medicare and Medicaid, any of which could substantially disrupt our operations and materially adversely affect our business and financial condition. If any of the physicians or other providers or entities with whom we expect to do business are found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

We and our employees are also subject to other statutes and regulations related to our business, including: regulations imposed by the FDA and applicable non-U.S. regulators, as previously discussed; anti-bribery and anti-corruption laws and regulations applicable to activities outside the U.S.; rules on reporting financial and other information or data timely and accurately; and rules related to insider trading.

Although we have adopted a code of conduct, it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may be ineffective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure by our employees to comply with these laws or regulations.

Data collection is governed by restrictive regulations governing the use, processing, and cross-border transfer of personal information.

We must comply with numerous federal, state and non-U.S. laws which govern the privacy and security of health and other personal information. As described above, HIPAA, as amended by HITECH and its implementing regulations, imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH increased the civil and criminal penalties that may be imposed and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA rules and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, when we conduct clinical trials in the U.S., any personal information that is collected in connection with these trials also is regulated by the Federal Policy for the Protection of Human Subjects (the Common Rule) which creates obligations for our company when conducting these trials.

In the event we enroll subjects in our ongoing or future clinical trials in the European Union, or EU, or other countries, we may be subject to additional privacy restrictions, including restrictions relating to the collection, use, storage, transfer, and other processing of personal data, including personal health data, regarding these individuals. Clinical trial activities in the EEA, for example, are governed by the General Data Protection Regulation, or GDPR, in relation to the processing of personal data. The GDPR imposes several requirements on companies that process personal data, strict rules on the transfer of personal data out of the EEA, including to the U.S. and fines and penalties for failure to comply with the requirements of the GDPR and the related national data protection laws of the EU Member States. 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 some situations. The obligations under the GDPR may be onerous and adversely affect our business, financial condition, results of operations and prospects. Compliance with the GDPR is 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 any European activities. The issues related to the transfer of personal data are subject to substantial uncertainty at this time, and there can be no reasonable level of confidence that any such data transfers will be found to be consistent with EU law if they are challenged. Further, the United Kingdom's exiting of the EU, often referred to as Brexit, has created additional uncertainty with regard to data protection regulation in the United Kingdom and the ability to transfer data from the EU to the UK and then from the UK to the U.S. At this time, it is unclear how data transfers to and from the United Kingdom will be regulated. Similar laws exist in many other countries around the world, and these laws (which are evolving and expanding) create complicated and potentially inconsistent obligations that may impact our business.

We are also subject to the California Consumer Privacy Act, or CCPA, which creates individual privacy rights for California consumers (as defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. 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 our business activities. The CCPA also has been amended through a recent referendum in California that creates additional obligations beginning in 2023. Additional states are evaluating similar kinds of general privacy legislation that may impact our business activities in the future. The uncertainty, ambiguity, complexity and potential inconsistency surrounding the implementation and interpretation of CCPA and other potential laws in other states exemplify the vulnerability of our business to the evolving regulatory environment related to the privacy, security and confidentiality of personal data and protected health information.

The FDA and other regulatory and enforcement agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. If we are found to have improperly promoted off-label uses, we may become subject to significant liability.

The FDA and other regulatory and enforcement agencies strictly regulate the promotional claims that may be made about prescription products, and enforce laws and regulations prohibiting the promotion of off-label uses. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in the approved labeling of the product. If we are found to have promoted off-label uses for any product, we may become subject to significant liability. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional

conduct is changed or curtailed. Any promotion of the off-label use of ZULRESSO or any of our future approved products by us or any of our employees could subject us to significant liability, which would materially adversely affect our business and financial condition.

Our future growth may depend, in part, on our ability to penetrate foreign markets, where we would be subject to additional regulatory burdens, price controls, reimbursement issues and other risks and uncertainties.

Our future profitability may depend, in part, on our ability, ourselves or through our collaborators, to commercialize our products and product candidates in foreign markets.

The pricing of prescription pharmaceuticals is subject to governmental control outside the U.S. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of regulatory approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidates to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our ability to generate revenues and become profitable could be impaired.

In some countries, including Member States of the EU, the pricing of prescription drugs is subject to governmental control. Additional countries may adopt similar approaches to the pricing of prescription drugs. There can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after coverage and reimbursement have been obtained. Reference pricing used by various countries and parallel distribution, or arbitrage between low-priced and high-priced countries, can further reduce prices. In the U.S., recent legislative proposals and various Trump administration proposals have advanced some form of international reference pricing, with the intent of lowering drug prices in the U.S. by benchmarking U.S. drug prices to prices of similar drugs in other countries which, if passed by Congress and adopted by the Biden administration, might mean that pricing decisions by us or our collaborators outside the U.S. in the future may limit the prices we are able to charge for our products in the U.S. 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 by us or our collaborators and the potential profitability of our products in those countries would be negatively affected.

Commercializing our products and product candidates in foreign markets would subject us to additional risks and uncertainties, including:

- our inability to directly control commercial activities to the extent we are relying on third parties;
- the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements, including the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute;
- different medical practices and customs in foreign countries affecting acceptance in the marketplace;
- import or export licensing requirements;
- longer accounts receivable collection times;
- reduced protection of intellectual property rights, and the existence of additional potentially relevant third-party intellectual property rights, in some foreign countries; and
- foreign currency exchange rate fluctuations.

Foreign sales of our product candidates could also be adversely affected by the imposition of governmental controls, political and economic instability, trade restrictions and changes in tariffs. For example, Brexit has already and

may continue to adversely affect European and/or worldwide regulatory conditions. Brexit could continue to lead to legal uncertainty and potentially divergent national laws and regulations in the EU and the United Kingdom, including those related to the pricing of prescription pharmaceuticals, as the United Kingdom determines which EU laws to replicate or replace, which could impair our ability to transact business in the EU and the United Kingdom in the future, if we elect to seek to commercialize any of our products there.

Risks Related to Our Intellectual Property Rights

If we are unable to adequately protect our proprietary technology, or obtain and maintain issued patents that are sufficient to protect our product candidates, others could compete against us more directly, which would have a material adverse impact on our business, results of operations, financial condition and prospects.

We strive to protect and enhance the proprietary technologies that we believe are important to our business, including seeking patents intended to cover our products and compositions, their methods of use and any other inventions that are important to the development of our business. We may also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

Our success will depend significantly 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, should they issue; preserve the confidentiality of our trade secrets; and operate without infringing the valid and enforceable patents and proprietary rights of third parties. We also rely on know-how, continuing technological innovation and in-licensing opportunities to develop, strengthen and maintain the proprietary position of our product candidates.

We cannot provide any assurances that any of our pending patent applications will mature into issued patents. For example, the U.S. Patent and Trademark Office, or U.S. PTO, has issued a final rejection against one of our patent applications claiming one of our proprietary GABAA positive allosteric modulator compounds, asserting a lack of novelty and non-obviousness. We are in the process of appealing this decision to the Patent Trial and Appeal Board, and may not be successful in overturning the rejection.

We may be unable to obtain issued patents covering our proprietary compounds. We cannot provide any assurances that any of our issued patents will be enforceable, or include claims with a scope sufficient to protect our product candidates or otherwise provide any competitive advantage. For example, the issued patent and patent applications that provide coverage for ZULRESSO only cover particular formulations and particular methods of using such formulations to treat depressive disorders such as PPD and MDD. As a result, such issued patent and any patent that may issue from such patent applications, would not prevent third-party competitors from creating, making and marketing alternative formulations of brexanolone that fall outside the scope of the patent claims or from practicing alternative methods. Moreover, other parties have developed technologies that may be related or competitive to our approach, and may have filed or may file patent applications and may have received or may receive patents that may overlap or conflict with our patent applications, either by claiming the same methods or formulations or by claiming subject matter that could dominate our patent position. Such third-party patent positions may limit or even eliminate our ability to obtain patent protection for certain inventions.

The patent positions of biotechnology and pharmaceutical companies, including our patent position, involve complex legal and factual questions, and, therefore, the issuance, scope, validity and enforceability of any patent claims that we may obtain cannot be predicted with certainty. Patents, if issued, may be challenged, deemed unenforceable, invalidated, or circumvented. U.S. patents and patent applications may also be subject to interference proceedings, *ex parte* reexamination, or *inter partes* review proceedings, supplemental examination and challenges in district court. Patents may be subjected to opposition, post-grant review, or comparable proceedings lodged in various foreign, both national and regional, patent offices. These proceedings could result in either loss of the patent or denial of the patent application or loss or reduction in the scope of one or more of the claims of the patent or patent application. In addition, such proceedings may be costly. For example, our granted European patent covering brexanolone i.v. has been opposed by a third party, and the opposition proceedings are ongoing. Thus, any patents, should they issue, that we may own or

exclusively license may not provide any protection against competitors. Furthermore, an adverse decision in an interference proceeding can result in a third party receiving the patent right sought by us, which in turn could affect our ability to develop, market or otherwise commercialize our product candidates. Furthermore, though a patent, if it were to issue, is presumed valid and enforceable, its issuance is not conclusive as to its validity or its enforceability, and it may not provide us with adequate proprietary protection or competitive advantages against competitors with similar products. Even if a patent issues, and is held to be valid and enforceable, competitors may be able to design around our patents, such as using pre-existing or newly developed technology. Other parties may develop and obtain patent protection for more effective technologies, designs or methods.

We also may not be able to prevent the unauthorized disclosure or use of our technical knowledge or trade secrets by consultants, vendors, former employees and current employees. The laws of some foreign countries do not protect our proprietary rights to the same extent as the laws of the U.S., and we may encounter significant problems in protecting our proprietary rights in these countries. If these developments were to occur, they could have a material adverse effect on our sales if any of our product candidates are approved in those countries. Our ability to enforce our patent rights depends on our ability to detect infringement. It is difficult to detect infringers who do not advertise the components that are used in their products. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's or potential competitor's product. Any litigation to enforce or defend our patent rights, even if we were to prevail, could be costly and time-consuming, and would divert the attention of our management and key personnel from our business operations. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded if we were to prevail may not be commercially meaningful.

In addition, proceedings to enforce or defend our patents, if and when issued, could put our patents at risk of being invalidated, held unenforceable, or interpreted narrowly. Such proceedings could also provoke third parties to assert claims against us, including that some or all of the claims in one or more of our patents are invalid or otherwise unenforceable. If any of our patents, if and when issued, covering our product or product candidates is invalidated or found unenforceable, our financial position and results of operations may be materially and adversely impacted. In addition, if a court found that valid, enforceable patents held by third parties covered our product candidates, our financial position and results of operations may also be materially and adversely impacted.

The degree of future protection for our proprietary rights is uncertain, and we cannot ensure that:

- any of our pending patent applications, if issued as a patent, will include claims having a scope sufficient to protect our current product candidates or any other products or product candidates;
- any of our pending patent applications will issue as patents at all;
- we will be able to successfully commercialize ZULRESSO or any of our product candidates, if successfully developed and approved, before our relevant patents expire;
- we were the first to make the inventions covered by each of our pending patent applications and any patents that may issue in the future;
- we were the first to file patent applications for these inventions;
- others will not develop similar or alternative technologies that do not infringe any patents that may be issued to us;
- others will not use pre-existing technology to effectively compete against us;
- any of our patents, if issued or as issued, will provide us with a competitive advantage and be found ultimately to be valid and enforceable;

- any patents issued to us will provide a basis for an exclusive market for our commercially viable products, will provide us with any competitive advantages or will not be challenged by third parties;
- we will develop additional proprietary technologies or product candidates that are separately patentable; or
- that our commercial activities or products will not infringe upon the patents or proprietary rights of others.

We may rely upon unpatented trade secrets and depend on unpatented know-how and continuing technological innovation to develop and maintain our competitive position, which we seek to protect, in part, by confidentiality agreements with our employees and our CROs, collaborators and consultants. It is possible that technology relevant to our business will be independently developed by a person that is not a party to such an agreement. Furthermore, if the employees and consultants who are parties to these agreements breach or violate the terms of these agreements, we may not have adequate remedies for any such breach or violation, and we could lose our trade secrets through such breaches or violations. Further, our trade secrets could otherwise become known or be independently discovered by our competitors.

We may infringe the intellectual property rights of others, which may prevent or delay our product development efforts and stop us from commercializing or increase the costs of commercializing ZULRESSO and our other product candidates, if approved.

Our success will depend in part on our ability to operate without infringing the intellectual property and proprietary rights of third parties. We cannot assure you that our business, products and methods do not or will not infringe the patents or other intellectual property rights of third parties. The pharmaceutical industry is characterized by extensive litigation regarding patents and other intellectual property rights. Other parties may allege that our products or product candidates or the use of our technologies infringes patent claims or other intellectual property rights held by them or that we are employing their proprietary technology without authorization. As we continue to develop our current product candidates and commercialize ZULRESSO and any future products, competitors may claim that our technology infringes their intellectual property rights as part of business strategies designed to impede our successful commercialization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, third parties may have currently pending patent applications which may later result in issued patents that our product or product candidates may infringe, or which such third parties claim are infringed by our technologies. The outcome of intellectual property litigation is subject to uncertainties that cannot be adequately quantified in advance. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our product candidates, products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid or unenforceable, and we may not be able to do this. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in pursuing these proceedings, which could have a material adverse effect on us. In addition, we may not have sufficient resources to bring these actions to a successful conclusion.

Patent and other types of intellectual property litigation can involve complex factual and legal questions, and their outcome is uncertain. Patent litigation is costly and time-consuming. Any claim relating to intellectual property infringement that is successfully asserted against us may require us to pay substantial damages, including treble damages and attorney's fees if we are found to be willfully infringing another party's patents, for past use of the asserted intellectual property and royalties and other consideration going forward if we are forced to take a license. In addition, if any such claim were successfully asserted against us and we could not obtain such a license, we may be forced to stop or delay developing, manufacturing, selling or otherwise commercializing our product or product candidates. In the case of trademark claims, if we are found to be infringing, we may be required to redesign, or rename, some or all of our product candidates to avoid infringing the intellectual property rights of third parties, which may not be possible and, even if possible, could be costly and time-consuming. Even if we are successful in these proceedings, we may incur substantial costs and divert management time and attention in pursuing these proceedings, which could have a material adverse effect on us.

Any of these risks coming to fruition could have a material adverse effect on our business, results of operations, financial condition and prospects.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We enter into confidentiality and intellectual property assignment agreements with our employees, consultants, CROs, outside scientific collaborators, and other advisors. These agreements generally provide that inventions conceived by the party in the course of rendering services to us will be our exclusive property. However, these agreements may not be honored and may not effectively assign intellectual property rights to us. For example, even if we have a consulting agreement in place with an academic advisor pursuant to which such academic advisor is required to assign to us any inventions developed in connection with providing services to us, such academic advisor may not have the right to assign such inventions to us, as it may conflict with his or her obligations to assign all such intellectual property to his or her employing institution or another party.

Most of our employees have also been previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. We also engage advisors and consultants who are concurrently employed at universities or who perform services for other entities. We may be subject to claims that an employee, advisor or consultant performed work for us that conflicts with that person's obligations to a third party, such as an employer, and thus, that the third party has an ownership interest in the intellectual property arising out of work performed for us.

Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees which could have a materially adverse effect on our business.

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 noncompliance with these requirements.

The U.S. PTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other formalities and provisions during the patent process. There are situations in which noncompliance can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to enter the market earlier than would otherwise have been the case.

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.

Even if the patent applications we own or license are issued, competitors may infringe these patents. 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 a patent of ours or our licensors is not valid, is unenforceable and/or is not infringed, or may refuse to stop the other party from using the technology at issue on the grounds that our patents should be interpreted narrowly and do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference proceedings provoked by third parties or brought by us 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 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. Our defense of litigation or interference proceedings may fail and, even if 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 intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the U.S.

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. There could also 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 material adverse effect on the price of our common stock.

Issued patents covering our product or any of our product candidates could be found invalid or unenforceable if challenged in court.

If we or one of our collaborators or licensors initiated legal proceedings against a third party to enforce a patent, if and when issued, covering our product or any of our product candidates, the defendant could counterclaim that the patent covering our product or any of our product candidates is invalid and/or unenforceable. In patent litigation in the U.S., defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include alleged failures to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for unenforceability assertions include allegations that someone connected with prosecution of the patent withheld relevant information from the U.S. PTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the U.S. or abroad, even outside the context of litigation. Such mechanisms include re-examination, post-grant review, *ex parte* reexamination, or *inter partes* review and equivalent proceedings in foreign jurisdictions, e.g., opposition proceedings. Such proceedings could result in revocation or amendment of our patents in such a way that they no longer cover our product candidates or competitive products. For example, our granted European patent covering brexanolone i.v. has been opposed by a third party, and the opposition proceedings are ongoing. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to validity, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on the applicable product or product candidates. Such a loss of patent protection would have a material adverse impact on our business.

We will not seek to protect our intellectual property rights in all jurisdictions throughout the world and we may not be able to adequately enforce our intellectual property rights even in the jurisdictions where we seek protection.

Filing patent applications and prosecuting and defending patents on product candidates in all countries and jurisdictions throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the U.S. could be less extensive than those in the U.S., assuming that rights are obtained in the U.S. 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 U.S. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the U.S., or from selling or importing products made using our inventions in and into the U.S. or other jurisdictions. The statutory deadlines for pursuing patent protection in individual foreign jurisdictions are based on the priority date of each of our patent applications.

Competitors may use our technologies in jurisdictions where we do not pursue patent protection. They may pursue and obtain their own patent protection to develop their own products. Further, they may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the U.S. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing. Even if we pursue and obtain issued patents in particular jurisdictions, our patent claims or other intellectual property rights may not be effective or sufficient to prevent third parties from so competing.

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the U.S. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of some countries, particularly developing countries, do not favor the enforcement of patents and other intellectual property protection, especially those relating to biotechnology and pharmaceuticals. For example, a 2020 report from the Office of the U.S. Trade Representative identified a number of countries, including India and China, where challenges to the procurement and enforcement of patent rights have been reported. Several countries, including India and China, have been listed in the report every year since 1989. This could make it difficult for us to stop the infringement of our patents, if obtained, or the misappropriation of our other intellectual property rights in such jurisdictions. Many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. In addition, many countries limit the enforceability of patents against third parties, including government agencies or government contractors. In these countries, patents may provide limited or no benefit. Patent protection must ultimately be sought on a country-by-country basis, which is an expensive and time-consuming process with uncertain outcomes. Accordingly, we may choose not to seek patent protection in certain countries, and we will not have the benefit of patent protection in such countries.

Furthermore, proceedings to enforce our patent rights in foreign jurisdictions could, among other things, 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, could put 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.

For ZULRESSO and certain of our product candidates, we are dependent on licensed intellectual property. If we were to lose our rights to licensed intellectual property, we may not be able to continue developing or commercializing certain of our products or product candidates, if approved. If we breach any of the agreements under which we license the use, development and commercialization rights to our product candidates or technology from third parties or, in certain cases, we fail to meet certain development deadlines, we could lose license rights that are important to our business.

We are a party to a number of license agreements under which we are granted rights to intellectual property that are important to our business and we expect that we may need to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that future license agreements will impose on us, various development, regulatory and/or commercial diligence obligations, payment of milestones and/or royalties and other obligations. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, the licensor may have the right to terminate the license, in which event we would not be able to market products covered by the license. Our business could suffer, for example, if any current or future licenses terminate, if the licensors fail to abide by the terms of the license, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms.

As we have done previously, we may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates, and we cannot provide any assurances that third-party patents do not exist that might be enforced against our current product candidates or future products in the absence of such a license. We may fail to obtain any of these licenses on commercially reasonable terms, if at all. 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. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could materially harm our business and the third parties owning such intellectual property rights could seek either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation.

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues. Disputes may arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties under licenses or collaborative development relationships;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully commercialize our product or to successfully develop and commercialize the affected product candidates.

We have entered into several licenses to support our various programs. We may enter into additional licenses to third-party intellectual property that are necessary or useful to our business. Our current licenses and any future licenses that we may enter into impose various royalty payment, milestone, and other obligations on us. For example, the licensor may retain control over patent prosecution and maintenance under a license agreement, in which case, we may not be able to adequately influence patent prosecution or prevent inadvertent lapses of coverage due to failure to pay maintenance fees. If we fail to comply with any of our obligations under a current or future license agreement, the licensor may allege that we have breached our license agreement, and may accordingly seek to terminate our license. In addition, future licensors may decide to terminate their licenses with us at will. Termination of any of our current or future licenses could result in our loss of the right to use the licensed intellectual property, which could materially adversely affect our ability to develop a product candidate or commercialize a product, as well as harm our competitive business position and our business prospects.

In addition, if our licensors fail to abide by the terms of the license, if the licensors fail to prevent infringement by third parties, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms, our business could materially suffer.

Some intellectual property which we have licensed may have been discovered through government funded programs and thus may be subject to federal regulations such as "march-in" rights, certain reporting requirements, and a preference for U.S. industry. Compliance with such regulations may limit our exclusive rights, subject us to expenditure of resources with respect to reporting requirements, and limit our ability to contract with non-U.S. manufacturers.

Some of the intellectual property rights we have licensed may have been generated through the use of U.S. government funding and may therefore be subject to certain federal regulations. For example, some of the intellectual property rights licensed to us under the license agreement with The Regents of the University of California may have been generated using U.S. government funds. As a result, the U.S. government may have certain rights to intellectual property embodied in our current product or current or future product candidates pursuant to the Bayh-Dole Act of 1980, or Bayh-Dole Act. These U.S. government rights in certain inventions developed under a government-funded program include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the U.S. government has the right to require us to grant exclusive, partially exclusive, or non-exclusive licenses to any of these inventions to a third party if the government determines that: (i) adequate steps have not been taken to

commercialize the invention; (ii) government action is necessary to meet public health or safety needs; or (iii) government action is necessary to meet requirements for public use under federal regulations (also referred to as "march-in rights"). The U.S. government also has the right to take title to these inventions if we fail, or the applicable licensor fails, to disclose the invention to the government and fail to file an application to register the intellectual property within specified time limits. In addition, the U.S. government may acquire title to these inventions in any country in which a patent application is not filed within specified time limits. Intellectual property generated under a government funded program is also subject to certain reporting requirements, compliance with which may require us, or the applicable licensor, to expend substantial resources. In addition, the U.S. government requires that any products embodying the subject invention or produced through the use of the subject invention be manufactured substantially in the U.S. The manufacturing preference requirement can be waived if the owner of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the U.S. or that under the circumstances domestic manufacture is not commercially feasible. This preference for U.S. manufacturers may limit our ability to contract with non-U.S. product manufacturers for products covered by such intellectual property.

If we enter into future arrangements involving government funding, and we discover compounds or product candidates as a result of such funding, intellectual property rights to such discoveries may be subject to the applicable provisions of the Bayh-Dole Act.

If we do not obtain new chemical entity or other types of marketing and data exclusivity for our product candidates and if we do not obtain additional protection under the Hatch-Waxman Amendments and similar foreign legislation by extending the patent terms of our product candidates, our business may be materially harmed.

Marketing exclusivity provisions under the Federal Food, Drug, and Cosmetic Act, or FDCA, can delay the submission or the approval of certain marketing applications by other companies for a product with the same active moiety as a product we may in the future sell. The FDCA provides a five-year period of non-patent marketing exclusivity within the U.S. to the first applicant to obtain approval of an NDA for a new chemical entity, or NCE. 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 another drug based on the same active moiety, regardless of whether the drug is intended for the same indication as the original innovator drug or for another indication, 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 to one of the patents listed with the FDA by the innovator NDA holder. The FDCA also provides three years of marketing exclusivity for a full NDA, or supplement to an existing NDA, if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant 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 modification for which the drug received approval on the basis of the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the active agent for the original indication or condition of use. We have obtained NCE exclusivity for brexanolone and plan to seek NCE exclusivity for our current and future product candidates. There is also no guarantee that our product candidates will qualify for marketing or data exclusivity under these provisions or that such exclusivity for any of our products will alone be sufficient to for our business. The applicable five-year and three-year exclusivity periods of NCE or data exclusivity under the FDCA will not delay the submission or approval of a full NDA.

Depending upon the timing, duration and specifics of FDA marketing approval of our product candidates, one or more of the U.S. patents we own or license may be eligible for limited patent term restoration in the future under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. Even if, at the relevant time, we have a valid issued patent covering our product, we may not be granted an extension if we were to fail 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 restoration or the term of any such extension is less than we request, and we do not have

any other exclusivity, our competitors may obtain approval of competing products following our patent expiration and our business, financial condition or results of operations could be adversely affected.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

Our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology industry involves both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. In addition, the U.S. has recently enacted wide-ranging patent reform legislation: the Leahy-Smith America Invents Act, referred to as the America Invents Act. The America Invents Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted and may also affect patent litigation. It is not yet clear what, if any, impact the America Invents Act will have on the operation of our business. 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 any patents that may issue from our patent applications, all of which could have a material adverse effect on our business and financial condition.

In addition, 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. For example, in March 2012, in *Mayo Collaborative Services, DBA Mayo Medical Laboratories, et al. v. Prometheus Laboratories, Inc.*, the U.S. Supreme Court held that several claims drawn to measuring drug metabolite levels from patient samples and correlating them to drug doses were not patentable subject matter. The decision appears to impact diagnostics patents that merely apply a law of nature via a series of routine steps and it has created uncertainty around the ability to obtain patent protection for certain inventions. Additionally, in June 2013, in *Association for Molecular Pathology v. Myriad Genetics, Inc.*, the U.S. Supreme Court held that claims to isolated genomic DNA are not patentable, but claims to complementary DNA molecules are patent eligible because they are not a natural product. In June 2014, in *Alice Corporation Pty. Ltd. v. CLS Bank International, et al.*, a case involving patent claims directed to a method for mitigating settlement risk, the U.S. Supreme Court held that the patent eligibility of claims directed to abstract ideas, products of nature, and laws of nature should be determined using the same framework set forth in *Prometheus*. The U.S. PTO has issued a set of guidelines setting forth procedures for determining subject matter eligibility of claims directed to abstract ideas, products of nature, and laws of nature in line with the *Prometheus*, *Myriad*, and *Alice* decisions. The guidance does not limit the application of Myriad to DNA but, rather, applies the decision to other natural products. The full impact of these decisions on our business is not yet known.

In addition to increasing uncertainty with regard to our ability to obtain future patents, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on these and other decisions by the U.S. Congress, the federal courts and the U.S. PTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce any patents that may issue in the future.

Proposed legislation in Congress, if passed into law, could limit the patent exclusivity on our products or facilitate earlier entry of generic competition.

Members of Congress have proposed numerous legislative initiatives aimed at limiting the patent exclusivity on drug products or facilitating earlier entry of generic versions of approved drugs. Examples of bills that have been proposed include a bill that, if passed, would create a presumption of invalidity for patents beyond the first patent covering a drug product thus shifting the burden to the innovator to prove that these subsequent patents are separately patentable inventions, distinct from the first patent; a bill that, if passed, would empower the Federal Trade Commission to investigate whether large patent portfolios covering a drug product constitute an anti-competitive practice and to file antitrust lawsuits in such instances; and a bill that, if passed, would limit the availability of a 30-month stay on approval by the FDA of a generic version of a drug to only those instances where the ANDA litigation involves a composition of

matter patent claiming the drug substance. Such legislation, if passed into law, could adversely affect ZULRESSO or any future products or result in earlier entry into the market of generic versions of our drugs.

Risks Related to our Industry

Healthcare regulations aimed at reducing healthcare costs may have a material adverse effect on our business or results of operation.

There have been, and likely will continue to be, legislation and legislative and regulatory proposals in the U.S., both at the federal and state level, and in many foreign jurisdictions aimed at reducing healthcare costs. The implementation of unreasonable cost containment measures, drug pricing control or other reforms that do not recognize the clinical value of innovative medicines could have an adverse effect on our revenue from ZULRESSO or from the sales of any other products that are successfully developed and approved, and may limit our ability to achieve profitability.

For example, in March 2010, the ACA was passed, which substantially changed the way healthcare 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, provided 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 70% (pursuant to the Bipartisan Budget Act of 2018, effective as of 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.

There have been a number of significant changes to the ACA and its implementation, including as a result of lawsuits, provisions of other legislation such as The Tax Cuts and Jobs Act of 2017, and executive orders, including many issued by former President Trump. The ACA remains in effect, but it remains unclear how such litigation and other efforts to repeal and replace the ACA will impact the ACA and our business. Litigation and legislation with respect to the ACA are likely to continue, with unpredictable and uncertain results. It is uncertain whether the several executive orders related to the ACA and drug pricing issued by President Trump will be repealed or changed by President Biden.

There has been increasing legislative and enforcement interest in the U.S. with respect to drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed 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. At the federal level, the Trump administration's proposed budget for fiscal year 2020 contained further drug price control measures and released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional 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. There have been multiple Congressional efforts to address specialty drug pricing. It is unclear whether any such legislation will be signed into law, and if enacted, what effect it could have on our business. It is also unclear how the Biden administration will approach the issue of drug prices. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and price transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at containing or lowering the cost of healthcare or limiting exclusivity periods for pharmaceutical products. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government,

insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for ZULRESSO and for any of our product candidates, if approved;
- our ability to receive or set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability;
- the amount of taxes that we are required to pay; and
- the availability of capital.

We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, lower reimbursement, and new payment methodologies. This could lower the price that we receive for any approved product. Any denial in coverage or reduction in reimbursement from Medicare or other government-funded programs may result in a similar denial or reduction in payments from private payors, which may prevent us from being able to generate sufficient revenue from sales of ZULRESSO, successfully commercialize any future products approved in the future, and achieve profitability.

Our internal computer systems, or those of our collaborators, our third-party CROs or our other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our development programs.

Despite the implementation of security measures, our internal computer systems and those of our collaborators, our third-party CROs and our other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our programs or cause us to have liability for disclosure of personal information of our customers. For example, the loss of clinical trial data for our product candidates could result in delays in our regulatory submission and approval efforts and significantly increase our costs to recover or reproduce the data, if possible. To the extent that any disruption, disaster or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of our product candidates could be delayed or prevented.

We could be required to expend significant amounts of money and other resources to respond to these threats or breaches and to repair or replace information systems or networks. We also could suffer financial loss or the loss of valuable confidential information. In addition, we could be subject to regulatory actions and/or claims made by individuals and groups in private litigation involving privacy issues related to data collection and use practices and other data privacy laws and regulations, including claims for misuse or inappropriate disclosure of data, as well as unfair or deceptive practices. Although we develop and maintain systems and controls designed to prevent these events from occurring and we have a process to identify and mitigate threats, the development and maintenance of these systems, controls and processes are costly and require ongoing monitoring and updating as technologies change and efforts to overcome security measures become increasingly sophisticated. Moreover, despite our efforts, the possibility of these events occurring cannot be eliminated entirely and there can be no assurance that any measures we take will prevent cyber-attacks or security breaches that could adversely affect our business.

Risks Related to Our Financial Position and Need for Capital

We are a biopharmaceutical company with a limited operating history, and have not generated significant revenue to date. We have incurred significant operating losses since our inception, and anticipate that we will incur continued losses for the foreseeable future.

We are a biopharmaceutical company with a limited operating history on which investors can base an investment decision. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We were incorporated in April 2010. We have only one approved product, and only began generating revenue from product sales in the second quarter of 2019.

We have funded our operations to date primarily through proceeds from sales of common stock, including the sale of stock to BIMA; redeemable convertible preferred stock prior to our initial public offering and, to a lesser extent, the issuance of convertible notes. From our inception through December 31, 2020, we had received aggregate net proceeds of $2.8 billion from such transactions. We also received $1.0 billion in upfront payments under our collaborations with Biogen and Shionogi. As of December 31, 2020, our cash, cash equivalents and marketable securities were $2.1 billion. We have incurred net losses in each year since our inception, except for net income of $606.1 million for the year ended December 31, 2020, because of revenue recognized under a license and collaboration agreement with Biogen. Our net loss was $680.2 million for the year ended December 31, 2019, and our accumulated deficit was $1.0 billion as of December 31, 2020.

Substantially all of our operating losses have resulted from costs incurred in connection with our research and development programs and from selling, general and administrative costs associated with our operations. We expect to incur increasing levels of operating losses over the next several years and for the foreseeable future. Our prior losses, combined with expected future losses, have had, and will continue to have, an adverse effect on our stockholders' equity and working capital. We expect our research and development expenses to significantly increase in connection with clinical trials of our product candidates and efforts to seek regulatory approval for any product candidates that successfully complete clinical development. We also incur significant selling, general and administrative costs in support of ongoing commercialization efforts with respect to ZULRESSO. In addition, if we obtain marketing approval for our current or future product candidates beyond ZULRESSO, we will incur significant sales, marketing and outsourced-manufacturing expenses. We incur significant legal and accounting costs associated with operating as a public company. We expect to continue to incur additional significant and increasing operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with developing pharmaceutical products, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

Our ability to become profitable depends upon our ability to generate product revenue. We began to generate revenue from product sales in the second quarter of 2019 in conjunction with launch of our first product, ZULRESSO, which commenced in June 2019. We expect that our revenue opportunity for ZULRESSO will continue to be limited. Our ability to generate significant product revenue from any future approved product depends on a number of factors, including, but not limited to:

- our ability to initiate and successfully complete all efficacy and safety clinical trials and non-clinical studies required to file for, and obtain, U.S. and foreign marketing approval for our product candidates; and our ability to file for and receive marketing approval to commercialize our product candidates, if successfully developed; and

- with respect to an approved product, our ability, alone or with collaborators, to commercialize the product by developing and effectively deploying a sales force, and to achieve market acceptance and satisfactory reimbursement of such product in the medical community, with patients and with third-party payors.

If we are unable to generate significant product revenue, we will not become profitable, and may be unable to continue operations without continued funding.

We expect we will need to raise additional funding at some point in the future, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or in light of other strategic considerations. To the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, the ownership interest of our stockholders in our company will be diluted.

We are currently commercializing ZULRESSO and advancing our product candidates through non-clinical and clinical development. Commercializing a product and developing additional small molecule products are expensive. We expect our research and development expenses to increase substantially as we continue to advance our product candidates in clinical trials, continue our discovery efforts and seek regulatory approval of our product candidates, if we generate positive data in our other clinical programs. We also continue to incur significant expenses in connection with the commercialization of ZULRESSO and would expect commercialization expenses to increase significantly to commercialize other products, if successfully developed and approved. We expect we will require additional capital in the future to fund operating needs. We may need to raise additional funds sooner if we choose to pursue additional indications and/or geographies for our product candidates, conduct additional clinical trials for indications we are already pursuing beyond the anticipated trials, identify new potential opportunities or otherwise expand our activities more rapidly than we presently anticipate.

As of December 31, 2020, our cash, cash equivalents and marketable securities were $2.1 billion. Based on our current operating plans, we expect that our existing cash, cash equivalents and marketable securities will be sufficient to fund our anticipated level of operations for at least the next 12 months from the filing date of this Annual Report. Our current operating plan does not contemplate other development activities we may pursue or that all of the currently planned activities will proceed at the same pace, or that all of the activities will be fully initiated or completed during that time. We may use available capital resources sooner than we expect under our current operating plan. In addition, our operating plan may change. We may need or choose to seek additional funds sooner than planned, through equity or debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements or a combination of these approaches. In any event, we anticipate we will require additional capital to expand future development efforts for, obtain regulatory approval for, and to commercialize our product candidates. If the pandemic and related economic conditions continue for an extended period, or if our business prospects are impaired or the capital markets disrupted for any other reason, additional capital may not be available to us on acceptable terms, or at all. Failure to obtain capital if and when needed may force us to delay, limit or terminate our product development efforts or other operations. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or in light of other strategic considerations.

We cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. In the event we receive negative data from our key clinical programs or encounter other major setbacks in our development or regulatory activities or in our commercialization efforts, our stock price is likely to decline which would make a future financing more difficult and potentially more dilutive to our existing stockholders. For example, after the announcement of the topline results of the Phase 3 MOUNTAIN Study of zuranolone on December 5, 2019, our stock price declined significantly. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders. The issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or otherwise at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

To the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, the ownership interest of our stockholders in our company will be diluted. Debt financing, if available, would increase our fixed payment obligations and 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. If we raise additional funds through collaboration, strategic partnerships and licensing arrangements with third parties, we may have to relinquish valuable rights to our product candidates, our intellectual property, future revenue streams or grant licenses on terms that are not favorable to us.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any approved product, or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations.

Risks Related to Our Common Stock

Market volatility may affect our stock price and the value of an investment in our stock.

The market price for our common stock, similar to that of other biopharmaceutical companies, is volatile. The market price of our common stock may fluctuate significantly in response to a number of factors, most of which we cannot control, including, among others:

- the results of our commercialization efforts with respect to ZULRESSO, and our ability to attain commercial success;
- plans for, progress of, timing of, changes to, delays in or results from clinical trials or non-clinical studies of any of our product candidates, including positive or negative key data from such studies or clinical trials, serious adverse events arising in the course of development, or any delays or major announcements related to such studies or trials; and the success or failure of any regulatory activities with respect to our product candidates;
- the impact of the COVID-19 pandemic;
- announcements of new products, technologies, commercial relationships, acquisitions, collaborations or other events by us or our competitors;
- the success or failure of our therapies;
- regulatory or legal developments in the U.S. and other countries;
- adverse developments with respect to our intellectual property portfolio or failure to obtain or loss of exclusivity;
- failure of our future product candidates, if successfully developed and approved, to achieve commercial success;
- fluctuations in stock market prices and trading volumes of similar companies;
- the state of the U.S. and world economies, general market conditions and overall fluctuations in U.S. equity markets, including as a result of U.S. or world events;
- changes in healthcare laws affecting pricing, reimbursement or access;
- variations in our quarterly operating results;
- changes in our financial guidance or securities analysts' estimates of our financial performance;
- changes in accounting principles;
- our ability to raise additional capital and the terms on which we can raise it;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders;

- additions or departures of key personnel;
- discussion of us or our stock price by the press and by online investor communities; and
- other risks and uncertainties described in these risk factors.

We have broad discretion in how we use our existing cash and the proceeds from potential future follow-on public offerings, and may not use such cash and proceeds effectively, which could affect our results of operations and cause our stock price to decline.

We have considerable discretion in the use of our cash and the application of the net proceeds from our follow-on public offerings. We may use cash and net proceeds for purposes that do not yield a significant return or any return at all for our stockholders. In addition, pending their use, we may invest the net proceeds from the follow-on offerings in a manner that does not produce income or that loses value.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, even one that may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may delay or prevent an acquisition of us or a change in our management. These provisions include a classified board of directors, a prohibition on actions by written consent of our stockholders and the ability of our board of directors to issue preferred stock without stockholder approval. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. Although we believe these provisions collectively provide for an opportunity to obtain greater value for stockholders by requiring potential acquirers to negotiate with our board of directors, they would apply even if an offer rejected by our board were considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

Future sales of our common stock may cause our stock price to decline.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur could significantly reduce the market price of our common stock, and impair our ability to raise adequate capital through the sale of additional equity securities. For example, the 6,241,473 shares of our common stock held by BIMA are subject to an 18-month lockup period, after which BIMA will be able to sell shares subject to certain sales volume limitations. Following a second 18-month period, BIMA will be able to sell shares without limitation.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters are located in Cambridge, Massachusetts. We lease 63,017 square feet of office space in a multi-tenant building pursuant to a lease that will expire on August 31, 2024.

In May 2016, we entered into a lease, as amended in April 2018, under which we rent 40,419 square feet of additional office space in a separate multi-tenant building in Cambridge, Massachusetts. The term for this lease will expire on August 31, 2024.

We have entered into other non-material leases and may lease additional space prior to the expiration of our leases to meet the needs of the business.

Item 3. Legal Proceedings

We are not a party to any legal proceedings, and we are not aware of any material claims or actions pending or threatened against us. In the future, we might from time to time become involved in litigation relating to claims arising from our ordinary course of business, the resolution of which we do not anticipate would have a material adverse impact on our financial position, results of operations or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

On July 18, 2014, our common stock began trading on the Nasdaq Global Market under the symbol "SAGE". Prior to that time, there was no public market for our common stock.

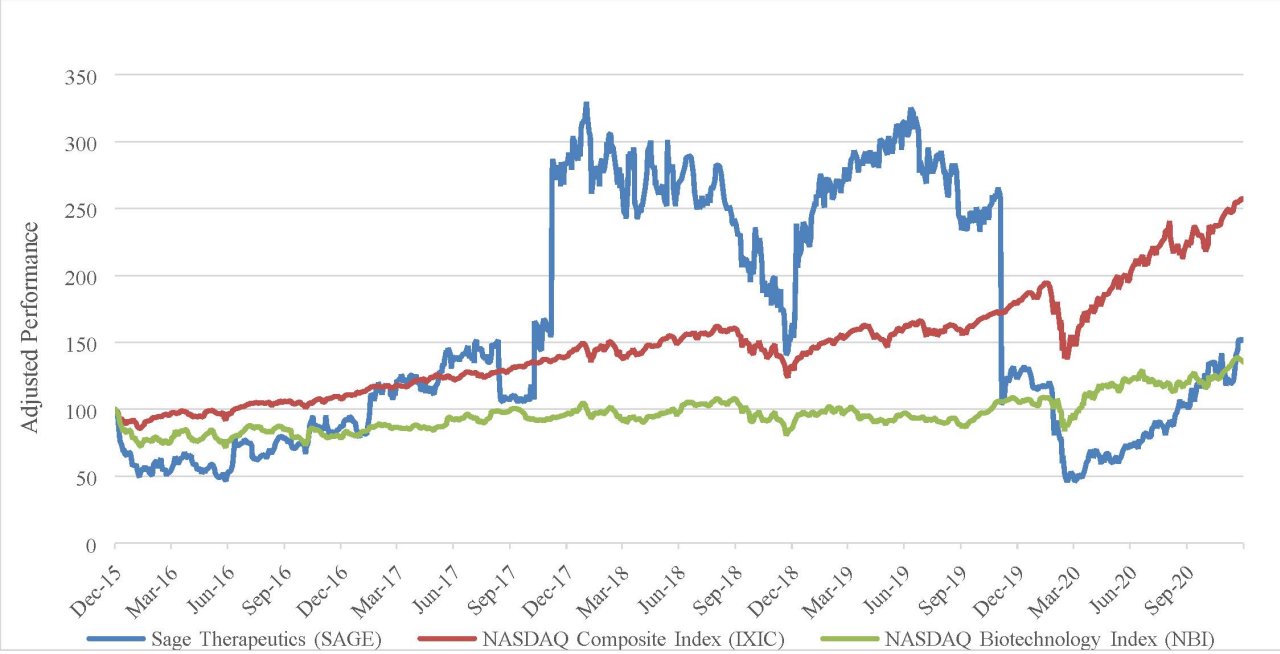
Stockholders

As of February 17, 2021, there were six stockholders of record of our common stock. The actual number of holders of our common stock is greater than this number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers or held by other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Performance Graph

The following graph illustrates a comparison of the total cumulative stockholder return for our common stock since January 1, 2016 through December 31, 2020, to two indices: the Nasdaq Composite Index and the Nasdaq Biotechnology Index. The graph assumes an initial investment of $100 on December 31, 2015 in our common stock, the stocks comprising the Nasdaq Composite Index, and the stocks comprising the Nasdaq Biotechnology Index. Historical stockholder return is not necessarily indicative of the performance to be expected for any future periods.

Comparison of Cumulative Total Return*
Among Sage Therapeutics, Inc., the Nasdaq Composite Index and the Nasdaq Biotechnology Index



* $100 invested on December 31, 2015 in stock or index.

The performance graph shall not be deemed to be incorporated by reference by means of any general statement incorporating by reference this Annual Report into any filing under the Securities Act of 1933, as amended or the

Securities Exchange Act of 1934, as amended, except to the extent that we specifically incorporate such information by reference, and shall not otherwise be deemed filed under such acts.

Dividend Policy

We have never paid or declared any cash dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business. Any future determination to pay dividends will be at the discretion of our board of directors and will depend upon a number of factors, including our results of operations, financial condition, future prospects, contractual restrictions, restrictions imposed by applicable law and other factors that our board of directors deems relevant.

Equity Compensation Plans

The information required by Item 5 of Form 10-K regarding equity compensation plans is incorporated herein by reference to Item 12 of Part III of this Annual Report.

Issuer Purchases of Equity Securities

We did not purchase any of our registered equity securities during the period covered by this Annual Report.

Item 6. Selected Financial Data

Not applicable.

Item 7. 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 our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K, or Annual Report. In addition to historical information, this discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. We caution you that forward-looking statements are not guarantees of future performance, and that our actual results of operations, financial condition and liquidity, and the developments in our business and the industry in which we operate, may differ materially from the results discussed or projected in the forward-looking statements contained in this Annual Report. We discuss risks and other factors that we believe could cause or contribute to these potential differences elsewhere in this report, including under Part I, Item 1A, "Risk Factors" and under "Cautionary Note Regarding Forward-Looking Statements" in this Annual Report. In addition, even if our results of operations, financial condition and liquidity, and the developments in our business and the industry in which we operate are consistent with the forward-looking statements contained in this Annual Report, they may not be predictive of results or developments in future periods. We caution readers not to place undue reliance on any forward-looking statements made by us, as such statements speak only as of the date they are made. We disclaim any obligation, except as specifically required by law and the rules of the Securities and Exchange Commission, or SEC, to publicly update or revise any such statements to reflect any change in our expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

Information pertaining to fiscal year 2018 was included in the Company's Annual Report on Form 10-K for the year-ended December 31, 2019, on pages 82 through 100, under Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," which was filed with the SEC on February 27, 2020.

Overview

We are a biopharmaceutical company committed to developing and commercializing novel medicines with the potential to transform the lives of people with debilitating disorders of the brain. Our first product, ZULRESSO® (brexanolone) CIV injection, is approved in the U.S. for the treatment of postpartum depression, or PPD, in adults. We have a portfolio of other product candidates with a current focus on modulating two critical central nervous system, or CNS, receptor systems, GABA and NMDA. The GABA receptor family, which is recognized as the major inhibitory neurotransmitter in the CNS, mediates downstream neurologic and bodily function via activation of GABAA receptors. The NMDA-type receptors of the glutamate receptor system are a major excitatory receptor system in the CNS. Dysfunction in these systems is implicated in a broad range of CNS disorders. We are currently targeting diseases and disorders of the brain with three key focus areas: depression, neurology and neuropsychiatry.

Our first product, ZULRESSO, is a proprietary intravenous formulation of brexanolone, approved in the U.S. as a treatment for postpartum depression, or PPD, in adults. Brexanolone is chemically identical to allopregnanolone, a naturally occurring neuroactive steroid that acts as a positive allosteric modulator of GABAA receptors. We launched ZULRESSO commercially in the U.S. in June 2019.

Our next most advanced product candidate is zuranolone (SAGE-217), a novel oral compound being developed for certain affective disorders, including major depressive disorder, or MDD, and PPD. Zuranolone is a neuroactive steroid that, like brexanolone, is a positive allosteric modulator of GABAA receptors, targeting both synaptic and extrasynaptic GABAA receptors. We are currently conducting three Phase 3 placebo-controlled clinical trials of zuranolone – the WATERFALL Study and the CORAL Study in MDD, and the SKYLARK Study in PPD – as well as an open-label Phase 3 clinical trial in MDD known as the SHORELINE Study. We expect to report topline results from the WATERFALL Study in the first half of 2021, and topline results from the other zuranolone Phase 3 clinical trials at various times throughout the remainder of 2021.

In addition to zuranolone, we have a portfolio of other novel compounds that target GABAA receptors, including SAGE-324. SAGE-324 is a novel GABAA receptor positive allosteric modulator intended for chronic oral dosing. We are currently conducting a placebo-controlled Phase 2 clinical trial evaluating the safety and efficacy of SAGE-324 in the treatment of essential tremor, known as the KINETIC Study. We expect to report topline data from this study in early

2021. If the results of the KINETIC Study support further development, we expect to initiate additional development activities including the next placebo-controlled Phase 2 clinical trial of SAGE-324 in essential tremor in late 2021 to explore dose and frequency, including potential formulations. We believe SAGE-324 also has potential for the treatment of a number of other neurological conditions, including epilepsy and Parkinson's disease.

We are jointly developing zuranolone and SAGE-324 in the U.S. with Biogen MA Inc., or BIMA, and Biogen International GmbH, or, together with BIMA, Biogen, under a collaboration and license agreement, or the Biogen Collaboration Agreement, that became effective in December 2020. Under the Biogen Collaboration Agreement, we will also jointly commercialize products containing zuranolone, which we refer to as Licensed 217 Products, and products containing SAGE-324, which we refer to as Licensed 324 Products, with Biogen in the U.S. if our development efforts are successful. We refer to the Licensed 217 Products and Licensed 324 Products collectively as the Licensed Products. In addition, we have granted Biogen sole rights to develop and commercialize the Licensed Products outside the U.S., other than in Japan, Taiwan and South Korea, or the Existing Partner Territory, where we have granted rights to Shionogi & Co., Ltd., or Shionogi, with respect to zuranolone. We refer to the territories outside the U.S. to which Biogen has rights under the Biogen Collaboration Agreement with respect to the applicable Licensed Product as the Biogen Territory.

Our second area of focus for future clinical development is novel compounds that target the NMDA receptor. The first product candidate selected for development from this program is SAGE-718, an oxysterol-based positive allosteric modulator of the NMDA receptor, which we are exploring in certain cognition-related disorders associated with NMDA receptor dysfunction, including cognition dysfunction associated with diseases such as Huntington's disease, Parkinson's disease and Alzheimer's disease. We are currently conducting a Phase 2a open-label study of SAGE-718 evaluating patients with Parkinson's disease cognitive dysfunction, known as the PARADIGM Study, and a Phase 2a open-label clinical trial of SAGE-718 in patients with Alzheimer's disease mild cognitive impairment and mild dementia, known as the LUMINARY Study. We expect to report topline data from the PARADIGM Study in early 2021 and from the LUMINARY Study in late 2021. We plan to initiate further development activities including a placebo-controlled Phase 2 clinical trial with SAGE-718 in late 2021 with the indication and design to be informed by the results of these clinical trials as well as results of an earlier Phase 1 clinical trial in Huntington's disease.

We have other compounds at earlier stages of development with a focus on both acute and chronic brain healthy disorders. Our early-stage GABAA modulators include SAGE-689, expected to begin Phase 1 development in 2021 as a potential intramuscular therapy for disorders associated with acute GABA hypofunction, and SAGE-319, intended to be studied as an oral therapy for potential use in disorders of social interaction. Our early-stage NMDA modulators include SAGE-904, in Phase 1 development as a potential oral therapy for disorders associated with NMDA hypofunction, and SAGE-421, intended to be studied as a potential oral therapy for certain neurodevelopmental disorders and cognitive recovery and rehabilitation. We expect to continue our work on allosteric modulation of the GABAA and NMDA receptor systems in the brain. The GABAA and NMDA receptor systems are broadly accepted as impacting many psychiatric and neurological disorders, spanning disorders of mood, seizure, cognition, anxiety, sleep, pain, and movement, among others. We believe that we may have the opportunity to develop molecules from our internal portfolio with the goal of addressing a number of these disorders in the future. We believe that we may also have the opportunity to use our scientific approach to explore targets beyond the GABAA and NMDA receptor systems and to develop compounds in areas of unmet need outside of brain health.

We began to generate revenue from product sales in the second quarter of 2019 in conjunction with the launch of our first product, ZULRESSO in June 2019. Prior to the second quarter of 2019, all of our revenue had been derived from a strategic collaboration we entered into in mid-2018 with Shionogi for the clinical development and commercialization of zuranolone in the Existing Partner Territory. In the fourth quarter of 2020, we recorded revenue from the strategic collaboration with and stock purchase by Biogen.

We have incurred net losses in each year since our inception, except for net income of $606.1 million for the year ended December 31, 2020, because of revenue recognized under a license and collaboration agreement with Biogen, and we had an accumulated deficit of $1.0 billion as of December 31, 2020. Our net losses were $680.2 million and $372.9 million for the years ended December 31, 2019 and 2018, respectively. These losses have resulted principally from costs incurred in connection with research and development activities and selling, general and administrative costs associated

with our operations and our commercial build. We expect to incur significant expenses and increasing operating losses for the foreseeable future.

We expect that we will incur significant expenses in the foreseeable future in connection with our ongoing activities, if and as we:

- continue to advance Phase 3 clinical development and regulatory activities with respect to zuranolone in PPD and MDD, and potentially advance zuranolone for other indications, as part of our strategic collaboration with Biogen;
- continue our commercialization efforts with respect to ZULRESSO in the treatment of PPD in the U.S., with a primary focus in geographies that have existing, active ZULRESSO treating sites;
- complete the ongoing KINETIC Study in essential tremor, and, if the results support further development, initiate additional development activities including the next placebo-controlled Phase 2 clinical trial with SAGE-324 in essential tremor to explore dose and frequency, including potential formulations, with potential future development in epilepsy, Parkinson's disease, and other neurological conditions, as part of our strategic collaboration with Biogen;
- complete the ongoing Phase 2a open-label PARADIGM Study of patients with Parkinson's disease cognitive dysfunction and Phase 2a open-label LUMINARY Study of patients with Alzheimer's disease mild cognitive impairment and mild dementia, and initiate planned placebo-controlled Phase 2 clinical trial with indication and design to be determined based on results of completed and ongoing SAGE-718 clinical trials;
- support our collaboration with Biogen with respect to zuranolone and SAGE-324 in the U.S., and support Biogen's development of zuranolone and SAGE-324 in Biogen's licensed territories outside the U.S. and Shionogi's development of zuranolone in the Existing Partner Territory;
- advance SAGE-689 and SAGE-904 in Phase 1 clinical development, including conducting planned Phase 1 clinical trials;
- continue our research and development efforts to evaluate the potential for our existing product candidates in the treatment of additional indications or in new formulations;
- identify new targets, and generate and test new compounds and product candidates, with a focus on indications where we believe we can make well-informed, rapid go/no-go decisions, with the goal of developing a diversified portfolio of assets with differentiated features;
- prepare and file new drug applications with the U.S. Food and Drug Administration, or FDA, and conduct pre-launch activities with respect to any of our product candidates that have been successfully developed;
- commercialize any product candidates for which we obtain regulatory approval, including the manufacture of commercial supplies;
- at the appropriate time, as our development efforts progress, add personnel, including personnel to support product development and ongoing and future commercialization efforts;
- evaluate the market potential and regulatory pathways for our product candidates beyond zuranolone and SAGE-324 in the European Union and other countries outside the U.S., and determine how best to move forward where and when it may make business and strategic sense;
- continue to build, maintain, defend, leverage, and expand our intellectual property portfolio, including by utilizing the strengths of our proprietary chemistry platform and scientific know-how to expand our portfolio of

new chemical entities to lessen our long-term reliance on the success of any one program and to facilitate long-term growth; and

- continue to explore opportunities to establish agreements or alliances with other pharmaceutical companies, at the appropriate time, where we believe a collaboration will add significant value to our efforts, including through capabilities, infrastructure, speed or financial contributions, or to acquire new compounds, product candidates or products if we believe such opportunities will help us achieve our goals or meet other strategic objectives.

Until such time that we can generate significant revenue from product sales, if ever, we expect to finance our operations primarily through a combination of revenue, equity or debt financings and other sources, including our collaborations with Biogen, Shionogi, and potentially, in the future, additional third parties. We may not be successful in our commercialization of ZULRESSO or any other product, and may not generate meaningful revenue or revenue at the levels or on the timing necessary to support our investment and goals. We may never successfully complete development of any of our current or future product candidates, obtain necessary regulatory approval for such product candidates, or achieve commercial viability for any resulting approved product. We may not obtain or maintain adequate patent protection or other exclusivity for our products or product candidates. Adequate additional financing may not be available to us on acceptable terms, or at all. Our inability to raise capital if and when needed would have a negative impact on our financial condition and on our ability to pursue our business strategy. Arrangements with our existing collaborators have required us to relinquish rights to certain of our technologies or product candidates, and any future collaborations may require us to relinquish additional rights. We will need to generate significant revenue to achieve profitability, and we may never do so.

We expect that our existing cash, cash equivalents and marketable securities as of December 31, 2020, will enable us to fund our operating expenses and capital expenditure requirements, based on our current operating plan, for at least the next 12 months from the filing date of this Annual Report. See "—Liquidity and Capital Resources".

Financial Operations Overview

Revenue

We began to generate revenue from product sales in the second quarter of 2019 in conjunction with the launch of our first product, ZULRESSO in June 2019. Prior to the second quarter of 2019, all of our revenue had been derived from a strategic collaboration we entered into in mid-2018 with Shionogi.

Our revenue from sales of ZULRESSO has been negatively impacted by significant barriers arising from the complex requirements for treatment, and, more recently, by the spread of COVID-19 in the U.S. ZULRESSO is administered as a continuous infusion given over two and a half days. Because of the risk of serious harm resulting from excessive sedation or sudden loss of consciousness during the ZULRESSO infusion, ZULRESSO must be administered only in a medically-supervised healthcare setting that has been certified under a REMS program and meets the other requirements of the REMS program, including requirements related to monitoring of the patient during the infusion. The actions required for a healthcare setting to be ready and willing to treat women with PPD are complex and time-consuming. These actions include: becoming REMS-certified; achieving formulary approvals; establishing protocols for administering ZULRESSO; and securing satisfactory reimbursement. Sites must often negotiate reimbursement on a payor-by-payor basis under commercial coverage. These requirements have created significant barriers to treatment, and are expected to continue to limit future revenue growth. These barriers have been compounded by the COVID-19 pandemic. The spread of COVID-19 in the U.S. has resulted in a significant number of sites of care pausing treatment of new patients with ZULRESSO and potential new sites of care pausing site activation activities. We believe concerns about exposure to the virus have also caused a significant reduction in the number of women with PPD seeking treatment with ZULRESSO and in physicians willing to prescribe it. Given the continuing concerns about the COVID-19 pandemic across the country, we expect the significant adverse impact of the pandemic on ZULRESSO revenues to continue. We anticipate that the COVID-19 pandemic will also continue to have an adverse impact on our results of operations from sales of ZULRESSO as pandemic-related restrictions are expected to continue to be in effect for the foreseeable future. The scope and timing of the expected negative impact will depend on, among other factors, the

duration and severity of precautionary measures taken to curb the spread of COVID-19, the length, location and frequency of surges or waves of COVID-19 cases and the timing and success of the roll-out of vaccines for COVID-19 and any return to normal business operations across the U.S.

In April 2020, we implemented a workforce reduction that primarily affected the ZULRESSO commercial operation and related support functions, including eliminating the entirety of our salesforce at that time. While we remain committed to working with healthcare providers and women with PPD seeking access to ZULRESSO and plan to continue to evaluate opportunities to raise awareness and help reduce hurdles to appropriate treatment, our ongoing commercial efforts, including our small account management field-based team and a small number of sales representatives, are primarily focused on geographies that have existing, active ZULRESSO treating sites. We expect that this approach to our commercial efforts may continue to substantially limit the revenue opportunity for ZULRESSO.

We expect that ZULRESSO revenues are likely to fluctuate quarter to quarter. We will not generate revenue from other products unless and until we or any of our collaborators successfully develop, obtain regulatory approval of, and commercialize one of our current or future product candidates. If we enter into additional collaboration agreements with third parties for our product candidates, we may generate revenue from those collaborations. We expect that revenue, if any, that we may generate under our collaboration agreements will fluctuate from quarter to quarter as a result of the timing and amount of license fees, payments for clinical materials or manufacturing services, milestone payments, royalties paid to us and our share of collaboration profits or losses resulting from sales of any commercialized products, and other payments.

In June 2018, we entered into a strategic collaboration with Shionogi for the clinical development and commercialization of zuranolone for the treatment of MDD and other potential indications in the Existing Partner Territory. Under the terms of the agreement, Shionogi is responsible for all clinical development, regulatory filings and commercialization and manufacturing of zuranolone for MDD, and potentially other indications, in the Existing Partner Territory. In October 2018, we also entered into a supply agreement with Shionogi for zuranolone clinical material. To date, revenue from our collaboration with Shionogi has come from an initial, upfront license fee upon execution of the collaboration agreement of $90.0 million, which was recorded as collaboration revenue in the year ended December 31, 2018, and for the supply of active pharmaceutical agreement, or API, for Shionogi's clinical trials.

In November 2020, we entered into the Biogen Collaboration Agreement with Biogen for the development, manufacture and commercialization of the Licensed Products. In connection with the execution of the Biogen Collaboration Agreement, we also entered into a stock purchase agreement for the sale and issuance to BIMA of 6,241,473 shares of our common stock. The Biogen Collaboration Agreement became effective on December 28, 2020, and the sale of the common stock under the stock purchase agreement closed on December 31, 2020. Under the terms of the Biogen Collaboration Agreement we will jointly develop and commercialize the Licensed Products in the U.S., and Biogen solely will develop and commercialize the Licensed Products in the Biogen Territory, except, with respect to the Licensed 217 Products, in the Existing Partner Territory. We and Biogen have agreed to share equally all costs for activities under the Biogen Collaboration Agreement solely for the U.S. Biogen is solely responsible for all costs for activities under the Biogen Collaboration Agreement in the Biogen Territory. In the year ended December 31, 2020, we recorded collaboration revenue of $1.1 billion, consisting of an upfront payment of $875.0 million plus $232.5 million in excess proceeds from the equity investment under the stock purchase agreement, when measured at fair value.

Cost of goods sold

Cost of goods sold includes direct and indirect costs related to the manufacturing and distribution of ZULRESSO, including third-party manufacturing costs, packaging services, freight, third-party royalties payable on our net product revenues and amortization of intangible assets associated with ZULRESSO. We estimate that our cost of goods sold as a percentage of net product revenue will remain in the mid-single digit percentage range for the foreseeable future. We expect to utilize zero-cost inventory with respect to ZULRESSO for an extended period of time.

Operating Expenses

Our operating expenses since inception have consisted primarily of costs associated with research and development activities and selling, general and administrative activities.

Research and Development Expenses

Research and development expenses, which consist primarily of costs associated with our product research and development efforts, are expensed as incurred. Research and development expenses consist primarily of:

- personnel costs, including salaries, benefits, stock-based compensation and travel expenses, for employees engaged in research and development functions;
- expenses incurred under agreements with contract research organizations, or CROs, and sites that conduct our non-clinical studies and clinical trials;
- expenses associated with manufacturing materials for use in non-clinical studies and clinical trials and developing external manufacturing capabilities;
- costs of outside consultants engaged in research and development activities, including their fees and travel expenses;
- other expenses related to our non-clinical studies and clinical trials and expenses related to our regulatory activities;
- payments made under our third-party license agreements; and
- a portion of our information technology, facilities and other related expenses, including rent, depreciation, maintenance of facilities, insurance and supplies.

Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors and our clinical sites.

We have been developing our product candidates and focusing on other research and development programs, including exploratory efforts to identify new compounds, target validation for identified compounds and lead optimization for our earlier-validated programs. Our direct research and development expenses are tracked on a program-by-program basis, and consist primarily of external costs, such as fees paid to investigators, central laboratories, CROs and contract manufacturing organizations, in connection with our non-clinical studies and clinical trials; third-party license fees related to our product candidates; and fees paid to outside consultants who perform work on our programs. We do not allocate employee-related costs and other indirect costs to specific research and development programs because these costs are deployed across multiple product programs under research and development and, as such, are separately classified as unallocated or stock-based compensation in research and development expenses.

Research and development activities are central to our business. 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 continue or initiate clinical trials and non-clinical studies for certain product candidates and pursue later stages of clinical development of our product candidates.

We cannot determine with certainty the duration and costs of the current or future clinical trials of our product candidates. The duration, costs, and timing of clinical trials and development of our product candidates will depend on a variety of factors, including:

- the scope, size, rate of progress, and expense of our ongoing as well as any additional clinical trials, non-clinical studies, and other research and development activities;
- future results of ongoing, planned or future clinical trials and non-clinical studies;
- decisions by regulatory authorities related to our product candidates;

- uncertainties in clinical trial enrollment rate or design;
- significant and changing government regulation; and
- the receipt and timing of regulatory approvals, if any.

In addition, the ongoing COVID-19 pandemic may also negatively impact our ongoing and planned development activities and increase our research and development costs. Concerns, precautions and restrictions arising from the COVID-19 pandemic may substantially slow clinical site recruitment and initiation and enrollment in our clinical trials, may impair the conduct, auditing, monitoring, or completion of our trials, may impair or impede the timeliness and completion of our data collection and analysis efforts or the integrity of our data, or may cause us to pause trials, in each case which may significantly impact our ability to meet our expected timelines or cause us to change our plans and may significantly increase our research and development costs. For example, we have seen some slower recruitment in certain of our clinical trials, especially with respect to older patients.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the FDA or another regulatory authority were to require us to conduct clinical trials beyond those that we currently anticipate will be required for the completion of clinical development of a product candidate or for regulatory approval, or if we experience significant delays in enrollment in any of our clinical trials or need to enroll additional patients, we could be required to expend significant additional financial resources and time on the completion of clinical development.

Any failure to complete any stage of the development of any potential product candidates in a timely manner could have a material adverse effect on our operations, financial position and liquidity. A discussion of some of the risks and uncertainties associated with not completing our programs on schedule, or at all, and the potential consequences of failing to do so, are set forth in Part I, Item 1A, “Risk Factors”.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of personnel costs, including salaries, benefits and travel expenses for our executive, finance, business, commercial, corporate development and other administrative functions, and stock-based compensation expense. Selling, general and administrative expenses also include professional fees for expenses incurred under agreements with third parties relating to the commercialization of ZULRESSO; public relations, audit, tax and legal services, including legal expenses to pursue patent protection of our intellectual property; and a portion of our information technology, facilities and other related expenses, including rent, depreciation, maintenance of facilities, insurance and supplies.

In April 2020, we implemented a workforce reduction that primarily affected the ZULRESSO commercial operation and related support functions, including eliminating the entirety of our salesforce at that time. While we remain committed to working with healthcare providers and women with PPD seeking access to ZULRESSO and plan to continue to evaluate opportunities to raise awareness and help reduce hurdles to appropriate treatment, our ongoing commercial efforts, including our small account management field-based team and a small number of sales representatives, are primarily focused on geographies that have existing, active ZULRESSO treating sites. Even with the expected reduction in selling, general and administrative expenses as a result of the restructuring, we expect to continue to incur significant commercialization expenses, including payroll and related expenses, to support our ongoing commercial activities associated with ZULRESSO. We expect that selling, general and administrative expenses will increase in the future if we are successful in our development efforts and are preparing for potential commercialization of our current or future product candidates, if approved. We expect to continue to incur significant expenses associated with general operations, including costs related to accounting and legal services, director and officer insurance premiums, facilities and other corporate infrastructure and office-related costs, such as information technology costs.

Critical Accounting Policies and Significant Judgments and Estimates

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles in the U.S. The preparation of our consolidated financial statements and related disclosures requires us to make estimates and assumptions that affect the reported amount of assets, liabilities, revenue, costs and expenses, and related disclosures. We believe that the estimates and assumptions involved in the accounting policies described below may have the greatest potential impact on our consolidated financial statements and, therefore, consider these to be our critical accounting policies. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions and conditions. While our significant accounting policies are described in more detail in the notes to our consolidated financial statements appearing elsewhere in this Annual Report, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

We generate revenue from the sale of our product, ZULRESSO, which was approved by the FDA in March 2019 and we subsequently began selling in June 2019, and from collaboration and supply agreements with our collaborators. To date, revenue from our collaboration agreements has come from initial, upfront consideration allocated to licenses of intellectual property, and from the supply of material for clinical trials under a supply agreement.

Under Accounting Standards Codification, or ASC, Topic 606, "*Revenue from Contracts with Customers*", or Topic 606, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price, including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. Arrangements that include rights to additional goods or services that are exercisable at a customer's discretion are generally considered options. We assess if these options provide a material right to the customer and if so, they are considered performance obligations. The exercise of a material right may be accounted for as a contract modification or as a continuation of the contract for accounting purposes.

For contracts determined to be within the scope of Topic 606, we assess whether the goods or services promised within each contract are distinct to identify those that are performance obligations. This assessment involves subjective determinations and requires management to make judgments about the individual promised goods or services and whether such are separable from the other aspects of the contractual relationship. Promised goods and services are considered distinct provided that: (i) the customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer and (ii) the entity's promise to transfer the good or service to the customer is separately identifiable from other promises in the contract.

We allocate the transaction price (the amount of consideration we expect to be entitled to from a customer in exchange for the promised goods or services) to each performance obligation and recognize the associated revenue when (or as) each performance obligation is satisfied. Our estimate of the transaction price for each contract includes all variable consideration to which we expect to be entitled.

Collaboration and license revenue

In assessing whether a promised good or service is distinct in the evaluation of a collaboration or license arrangement subject to Topic 606, we consider factors such as the research, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. We also consider the intended benefit of the contract in assessing whether a promised good or service is separately identifiable from other promises in the contract. If a promised good or service is not distinct, we are required to combine that good or service with other promised goods or services until we identify a bundle of goods or services that is distinct.

The transaction price is then determined and allocated to the identified performance obligations in proportion to their standalone selling prices, or SSP, on a relative SSP basis. SSP is determined at contract inception and is not updated to reflect changes between contract inception and when the performance obligations are satisfied. Determining the SSP for performance obligations requires significant judgment. In developing the SSP for a performance obligation, we consider applicable market conditions and relevant entity-specific factors, including factors that were contemplated in negotiating the agreement with the customer and estimated costs. In certain circumstances, we may apply the residual method to determine the SSP of a good or service if the standalone selling price is considered highly variable or uncertain. We validate the SSP for performance obligations by evaluating whether changes in the key assumptions used to determine the SSP will have a significant effect on the allocation of arrangement consideration between multiple performance obligations.

If the consideration promised in a contract includes a variable amount, we estimate the amount of consideration to which we will be entitled in exchange for transferring the promised goods or services to a customer. We determine the amount of variable consideration by using the expected value method or the most likely amount method. We include the unconstrained amount of estimated variable consideration in the transaction price. The amount included in the transaction price is constrained to the amount for which it is probable that a significant reversal of cumulative revenue recognized will not occur. At the end of each subsequent reporting period, we re-evaluate the estimated variable consideration included in the transaction price and any related constraint, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis in the period of adjustment.

If an arrangement includes development and regulatory milestone payments, we evaluate whether the milestones are considered probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control or the licensee's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received.

In determining the transaction price, we adjust consideration for the effects of the time value of money if the timing of payments provides us with a significant benefit of financing. We do not assess whether a contract has a significant financing component if the expectation at contract inception is such that the period between payment by the licensees and the transfer of the promised goods or services to the licensees will be one year or less. We assessed our arrangements with Shionogi and Biogen and concluded that a significant financing component does not exist in either arrangement. For arrangements with licenses of intellectual property that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, we recognize royalty revenue and sales-based milestones at the later of (i) when the related sales occur, or (ii) when the performance obligation to which the royalty has been allocated has been satisfied.

We then recognize as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) each performance obligation is satisfied at a point in time or over time, and if over time this is based on the use of an output or input method. Revenue from our collaboration agreement with Shionogi has come from initial, upfront consideration that was allocated to the license of zuranolone and for the supply of drug product for Shionogi clinical trials. Revenue from our collaboration agreement with Biogen has come from initial, upfront consideration that was allocated to the licenses for the Licensed 217 Products and the Licensed 324 Products. For additional information, refer to Note 6, Collaboration Agreements, to our consolidated financial statements appearing elsewhere in this Annual Report.

Product revenue

We recognize product revenues, net of variable consideration related to certain allowances and accruals that are determined using the expected value method, in our consolidated financial statements at the point in time when control transfers to the customer, which is typically when the product has been delivered to the customer's location. The amount included in the transaction price is constrained to the amount for which it is probable that a significant reversal of cumulative revenue recognized will not occur. Our only performance obligation identified for ZULRESSO is to deliver the product to the location specified by the customer's order. We record shipping and handling costs associated with delivery of product to our customers within selling, general and administrative expenses on our consolidated statements of operations and comprehensive income (loss). We expense incremental costs of obtaining a contract as incurred if the

expected amortization period of the asset would be less than one year. If we were to incur incremental costs with an amortization period greater than a year, such costs would be capitalized as contract assets, as they are expected to be recovered, and would be expensed by amortizing on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates. We did not have any contract assets (unbilled receivables) at December 31, 2020, as customer invoicing generally occurs before or at the time of revenue recognition. We did not have any contract liabilities at December 31, 2020, as we did not receive any payments in advance of satisfying our performance obligations to our customers. Amounts billed or invoiced are included in prepaid expenses and other current assets on the consolidated balance sheets.

We record reserves, based on contractual terms, for the following components of variable consideration related to product sold during the reporting period, as well as our estimate of product that remains in the distribution channel inventory of our customers at the end of the reporting period. On a quarterly basis, we will update our estimates and record any necessary material adjustments in the period they are identified.

Chargebacks: We estimate chargebacks from our customers who directly purchase the product from us for discounts resulting from contractual commitments to sell products to eligible healthcare settings at prices lower than the list prices charged to our customers. Customers charge us for the difference between what they pay to us for the product and the selling price to the eligible healthcare settings. Reserves for chargebacks consist of credits that we expect to issue for units that remain in the distribution channel inventories at the end of each reporting period that we expect will be sold to eligible healthcare settings, and chargebacks that customers have claimed, but for which we have not yet issued a credit.

Government Rebates: We are subject to discount obligations under government programs, including Medicaid. We record reserves for rebates in the same period the related product revenue is recognized, resulting in a reduction of ZULRESSO product revenues and a current liability that is included in accrued expenses on our consolidated balance sheets. Our liability for these rebates consists of invoices received for claims from prior quarters that have not been paid or for which an invoice has not yet been received, estimates of claims for the current quarter, and estimates of future claims that will be made for product that has been recognized as revenue, but which remains in the distribution channel at the end of each reporting period.

Trade Discounts and Allowances: We generally provide customary invoice discounts on ZULRESSO sales to our customers for prompt payment and we pay fees for sales order management, data, and distribution services. We estimate our customers will earn these discounts and fees and deduct these discounts and fees in full from gross ZULRESSO revenues and accounts receivable at the time we recognize the related revenues.

Financial Assistance: We provide voluntary financial assistance programs to patients with commercial insurance that have coverage and reside in states that allow financial assistance. We estimate the financial assistance amounts for ZULRESSO and record any such amounts within accrued expenses on the consolidated balance sheets. The calculation of the accrual for financial assistance is based on an estimate of claims and the cost per claim that the we expect to receive using demographics for patients who have registered and been approved for assistance. Any adjustments are recorded in the same period the related revenue is recognized, resulting in a reduction of product revenue and the establishment of a current liability, which is included as a component of accrued expenses on the consolidated balance sheets.

Product Returns: Consistent with industry practice, we offer product return rights to direct customers for damaged, defective or expiring product, provided it is within a specified period around the product expiration date as set forth in our return goods policy. We estimate the amount of our product sales that may be returned by our customers and record this estimate as a reduction of revenue in the period the related product revenue is recognized, as well as a reserve within accrued expenses on our consolidated balance sheets. We have experienced no product returns to date. We will update our estimated refund liability, on at least a quarterly basis, based on actual shipments of ZULRESSO subject to contractual return rights, changes in expectations about the amount of estimated refunds or actual returns.

Collaborative arrangements

We analyze our collaboration arrangements to assess whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities and therefore within the scope of ASC Topic 808, *Collaborative Arrangements*, or Topic 808. This assessment is performed throughout the life of the arrangement based on changes in the responsibilities of all parties in the arrangement. For collaboration arrangements within the scope of Topic 808 that contain multiple elements, we first determine which elements of the collaboration are deemed to be within the scope of Topic 808 and which elements of the collaboration are more reflective of a vendor-customer relationship and therefore within the scope of Topic 606. For elements of collaboration arrangements that are accounted for pursuant to Topic 808, an appropriate recognition method is determined and applied consistently, either by analogy to authoritative accounting literature or by applying a reasonable and rational policy election. For those elements of the arrangement that are accounted for pursuant to Topic 606, we apply the five-step model described above.

Accrued Research and Development Expenses

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 and vendors 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 consolidated financial statements based on facts and circumstances known to us at that time. Examples of estimated accrued research and development expenses include fees paid to:

- CROs in connection with performing research and development services on our behalf;
- other providers in connection with clinical trials;
- vendors in connection with non-clinical development activities; and
- vendors related to product manufacturing, development and distribution of clinical supplies.

We base our expenses related to clinical trials on our estimates of the services received and efforts expended pursuant to contracts with multiple CROs that conduct and manage clinical trials on our behalf. The financial terms of these agreements 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 clinical trial milestones. When determining accruals, we estimate the time period over which services will be performed, enrollment of patients, number of sites activated and level of effort to be 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 prepaid accordingly. 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 reporting expenses that are too high or too low in any particular period. To date, we have not made any material adjustments to our prior estimates of accrued research and development expenses.

Stock-Based Compensation

We recognize compensation expense for stock-based awards, including grants of stock options and restricted stock units, made to employees and non-employee directors based on the estimated fair value on the date of grant, over the requisite service period. We recognize stock-based compensation expense for only the portion of awards that are expected to vest.

For awards that vest upon achievement of a performance condition, we recognize compensation expense when achievement of the performance condition is met or during the period from which meeting the condition is deemed probable until the expected date of meeting the performance condition.

We have historically granted stock options with exercise prices equivalent to the fair value of our common stock as of the date of grant. For grants of restricted stock units, we base the fair value on the stock price as of the date of grant. Prior to January 1, 2019, the majority of our grants were stock options. Effective January 1, 2019, for grants to employees, we began to grant a mix of stock options and restricted stock units.

Effective January 1, 2019, we recognize compensation expense for stock-based awards made to non-employee consultants based on the estimated fair value on the date of grant, over the requisite service period. Through December 31, 2018, we recognized compensation expense for stock-based awards granted to non-employee consultants based on the fair value of the awards on each date on which the awards vest. Compensation expense was recognized over the vesting period, provided that services were rendered by such non-employee consultants during that time. At the end of each financial reporting period, the fair value of unvested options was re-measured using the then-current fair value of our common stock and updated assumptions using the Black-Scholes option-pricing model.

The fair value of each option grant is estimated using the Black-Scholes option-pricing model. For the years ended December 31, 2019 and 2018, we estimated our expected volatility using a weighted average of the historical volatility of publicly-traded peer companies and the volatility of our common stock. Effective January 1, 2020, the Company began using the historical volatility of only our common stock, as there is adequate historical data for the duration of the expected term.

The expected term of the options granted to employees and non-employee directors by us has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. Through December 31, 2018, the expected term of our options granted to non-employee consultants was determined based on the contractual term of the options, and since January 1, 2019, the "simplified" method has been used. 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 time periods approximately equal to the expected term of the award. The expected dividend yield is based on the fact that we have never paid cash dividends and do not expect to pay any cash dividends in the foreseeable future.

The fair value of each stock option granted under our equity plans has been calculated on the date of grant using the following weighted average assumptions:

	Year Ended December 31,		
	2020	2019	2018
Expected dividend yield	0%	0%	0%
Expected volatility	77.86%	71.34%	74.45%
Risk-free interest rate	0.97%	2.21%	2.68%
Expected term	5.98 years	6.05 years	6.04 years

These assumptions represented our best estimates, but the estimates involve inherent uncertainties and the application of our judgment. As a result, if factors change and we use significantly different assumptions or estimates when valuing our stock options, our stock-based compensation expense could be materially different. In developing a forfeiture rate estimate for pre-vesting forfeitures, we have considered our historical experience of actual forfeitures. If our future actual forfeiture rate is materially different from our estimate, our stock-based compensation expense could be significantly different from what we have recognized in the current period.

At December 31, 2020, we had unrecognized stock-based compensation expense related to our unvested time-based stock option awards of $120.5 million, which is expected to be recognized over the remaining weighted average vesting period of 1.76 years.

At December 31, 2020, 288,575 performance-based stock options were both outstanding and unvested, and the total unrecognized stock-based compensation expense related to those awards was $20.6 million.

At December 31, 2020, 957,695 restricted stock units were both outstanding and unvested, and the total unrecognized stock-based compensation expense related to those awards was $58.2 million.

Recently Issued Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is set forth in Note 2, Summary of Significant Accounting Policies, to the consolidated financial statements appearing elsewhere in this Annual Report.

Results of Operations

Comparison of the Years Ended December 31, 2020 and 2019

The following table summarizes our results of operations for the years ended December 31, 2020 and 2019:

	Year Ended December 31,		Increase (Decrease)
	2020	2019	
	(in thousands)		
Product revenue, net	$ 6,700	$ 3,957	$ 2,743
Collaboration revenue	1,107,500	2,911	1,104,589
Total revenue	1,114,200	6,868	1,107,332
Operating costs and expenses:			
Cost of goods sold	565	400	165
Research and development	292,714	368,815	(76,101)
Selling, general and administrative	196,952	345,777	(148,825)
Restructuring	27,743	—	27,743
Total operating costs and expenses	517,974	714,992	(197,018)
Income (loss) from operations	596,226	(708,124)	1,304,350
Interest income, net	9,597	27,804	(18,207)
Other income, net	250	82	168
Net income (loss)	$ 606,073	$ (680,238)	$ 1,286,311

Product revenue, net

During the years ended December 31, 2020 and 2019, we recognized $6.7 million and $4.0 million, respectively, of net product revenues related to sales of ZULRESSO. Sales allowances and accruals consisted of patient financial assistance, distribution fees, discounts, and chargebacks.

Collaboration revenue

During the year ended December 31, 2020, we recognized collaboration revenue of $1.1 billion related to the execution of the Biogen Collaboration Agreement and the Biogen stock purchase agreement. The revenue consisted of an upfront payment of $875.0 million plus $232.5 million in excess proceeds from the equity investment under the stock purchase agreement that was allocated to the licenses for the Licensed 217 Products and the Licensed 324 Products delivered to Biogen in December 2020.

During the year ended December 31, 2020, we recognized no collaboration revenue from our agreement with Shionogi. During the year ended December 31, 2019, we recognized $2.9 million in collaboration revenue from our agreement with Shionogi related to the supply of zuranolone API for clinical development.

We expect that revenue, if any, that we may generate under our collaboration agreements will fluctuate from quarter to quarter as a result of the timing and amount of license fees, payments for clinical materials or manufacturing services, milestone payments, royalties paid to us and our share of collaboration profits or losses resulting from sales of any commercialized products, and other payments.

For further discussion regarding our collaboration agreements with Biogen and Shionogi and the accounting for revenue from collaboration agreements, refer to Note 6, Collaboration Agreements appearing elsewhere and Note 2,

Summary of Significant Accounting Policies in the Notes to Consolidated Financial Statements, appearing elsewhere in this Annual Report.

Cost of goods sold

During the years ended December 31, 2020 and 2019, cost of goods sold was $0.6 million and $0.4 million, respectively, and is made up of a low-single digit royalty cost on net product revenue to CyDex Pharmaceuticals, Inc. and The Regents of the University of California, or the Regents, the amortization of intangible assets associated with ZULRESSO and third-party manufacturing and distribution costs associated with labeling, packaging, and shipping of ZULRESSO. Prior to receiving initial FDA approval for ZULRESSO on March 19, 2019, we manufactured ZULRESSO inventory to be sold upon commercialization and recorded approximately $8.9 million related to this inventory build-up as research and development expense. As a result, the manufacturing costs related to the ZULRESSO inventory build-up incurred before FDA approval were already expensed in a prior period and are therefore excluded from the cost of goods sold for the years ended December 31, 2020 and 2019. We estimate that our cost of goods sold as a percentage of net product revenue will remain in the mid-single digit percentage range for the foreseeable future. We expect to utilize zero-cost inventory with respect to ZULRESSO for an extended period of time.

Research and development expenses

	Year Ended December 31,		Increase
	2020	2019	(Decrease)
	(in thousands)		
zuranolone (SAGE-217)	$ 116,614	$ 146,819	$ (30,205)
SAGE-324	19,482	21,449	(1,967)
SAGE-718	6,388	11,887	(5,499)
Other research and development programs	38,222	53,267	(15,045)
Unallocated expenses	69,638	72,462	(2,824)
Stock-based compensation	42,370	62,931	(20,561)
Total research and development expenses	$ 292,714	$ 368,815	$ (76,101)

Research and development expenses for the year ended December 31, 2020 were $292.7 million, compared to $368.8 million for the year ended December 31, 2019. The decrease of $76.1 million was primarily due to the following:

- a decrease of $30.2 million in expenses for zuranolone, primarily as a result of completion of the MOUNTAIN Study and decreased spending for clinical pharmacology studies, partially offset by an increase in spending for the WATERFALL Study and the SKYLARK Study;
- a decrease of $2.0 million in expenses for SAGE-324, primarily due to the completion of Phase 1 clinical trials while the initiation of Phase 2 clinical trials did not occur until mid- to late 2020;
- a decrease of $5.5 million in expenses for SAGE-718, primarily due to the completion of Phase 1 clinical trials in 2019 while the initiation of Phase 2 clinical trials did not occur until mid- to late 2020;
- a decrease of $15.0 million in expenses for other research and development programs, related to a decrease in spending on non-clinical studies; and
- a decrease of $20.6 million in non-cash stock-based compensation expense. There was no non-cash stock-based compensation expense recognized related to the achievement of performance-based vesting criteria during the year ended December 31, 2020. The amount of non-cash stock-based compensation expense related to the achievement of performance-based vesting criteria was $14.0 million for the year ended December 31, 2019. The remainder of the decrease is primarily from the impact of the cancellation of option grants that had been made to terminated employees, including those terminated in the April 2020 restructuring.

Selling, general and administrative expenses

	Year Ended December 31,		Increase
	2020	2019	(Decrease)
	(in thousands)		
Personnel-related	$ 58,403	$ 122,857	$ (64,454)
Stock-based compensation	51,836	90,300	(38,464)
Professional fees	50,533	76,594	(26,061)
Other	36,180	56,026	(19,846)
Total selling, general and administrative expenses	$ 196,952	$ 345,777	$ (148,825)

Selling, general and administrative expenses for the years ended December 31, 2020 and 2019 were $197.0 million and $345.8 million, respectively. The decrease of $148.8 million was primarily due to the following:

- a decrease of $64.5 million in personnel-related costs, mainly as a result of the termination of employees in the April 2020 restructuring;
- a decrease of $38.5 million in non-cash stock-based compensation expense. There was no non-cash stock-based compensation expense recognized related to the achievement of performance-based vesting criteria during the year ended December 31, 2020. The amount of non-cash stock-based compensation expense related to the achievement of performance-based vesting criteria was $13.2 million during the year ended December 31, 2019. The remainder of the decrease is primarily from the impact of the cancellation of option grants that had been made to terminated employees, including those terminated in the April 2020 restructuring;
- a decrease of $26.1 million in professional fees, primarily due to costs incurred in the year ended December 31, 2019, related to preparations for the commercial launch of ZULRESSO in the U.S. in June 2019 and the impact of the April 2020 restructuring on our spending for commercial activities; and
- a decrease of $19.8 million in other costs, primarily due to the impact of the April 2020 restructuring and the impact of the COVID-19 pandemic resulting in our employees working remotely and a reduction in business travel.

Restructuring

In April 2020, we announced a restructuring plan to enable us to advance our corporate strategy and pipeline that included the elimination of approximately 53% of our workforce. The workforce reduction primarily affected the ZULRESSO commercial operation and related selling, general and administrative support functions. In the year ended December 31, 2020, we recorded $27.7 million of expense for restructuring, primarily for one-time termination benefits to the affected employees, primarily for cash payments of severance, healthcare benefits and outplacement assistance.

Interest income, net and Other income, net

Interest income, net, and other income, net, for the years ended December 31, 2020 and 2019 were $9.8 million and $27.9 million, respectively. The primary reason for the decrease was the decrease in the balance of marketable securities, along with a reduction in interest rates. The payments of $1.5 billion that were received from Biogen on December 31, 2020, $875.0 million of which was an upfront payment and $650.0 of which was received in exchange for shares of our common stock, were in cash and cash equivalents in the balance sheet as of December 31, 2020.

Liquidity and Capital Resources

Prior to the second quarter of 2019, we had not generated revenue from product sales. We began to generate revenue from product sales in the second quarter of 2019 in conjunction with the launch of our first product, ZULRESSO, in June 2019. Prior to the second quarter of 2019, all of our revenue had been derived from our collaboration with Shionogi. To date, we have incurred recurring net losses, except for net income of $606.1 million for the year ended December 31, 2020, because of revenue recognized under a license and collaboration agreement with Biogen. As of

December 31, 2020, we had an accumulated deficit of $1.0 billion. From our inception through December 31, 2020, we have received aggregate net proceeds of $2.8 billion from the sales of redeemable convertible preferred stock prior to our initial public offering, the issuance of convertible notes, and the sales of common stock in our initial public offering in July 2014, follow-on offerings and the sale of stock to Biogen. We also received $1.0 billion in upfront payments under our collaborations with Biogen and Shionogi.

On February 27, 2019, we completed the sale of 3,833,334 shares of our common stock in a follow-on underwritten public offering at a price to the public of $150.00 per share, resulting in net proceeds of $560.9 million after deducting commissions and underwriting discounts and offering costs paid by us.

As described below, on December 31, 2020, we completed the sale of 6,241,473 shares of our common stock in a private placement to Biogen at a price to the public of approximately $104.14 per share, resulting in aggregate gross proceeds of $650.0 million.

As of December 31, 2020, our primary sources of liquidity were our cash, cash equivalents and marketable securities, which totaled $2.1 billion. We invest our cash in money market funds, U.S. government securities, corporate bonds and commercial paper, and our primary objectives are to preserve principal, provide liquidity and maximize income without significantly increasing risk.

The following table summarizes the primary sources and uses of cash for the years ended December 31, 2020 and 2019:

	Year Ended December 31,	
	2020	2019
	(in thousands)	
Net cash provided by (used in):		
Operating activities	$ 664,280	$ (528,706)
Investing activities	442,684	(143,156)
Financing activities	426,762	607,624
Total	$ 1,533,726	$ (64,238)

Operating Activities

During the year ended December 31, 2020, net cash used in operating activities primarily resulted from our net income of $606.1 million, which was primarily attributable to collaboration revenue from our collaboration with Biogen, partially offset by our research and development activities and our selling, general and administrative expenses, along with changes in our operating assets and liabilities of $39.7 million, partially offset by $97.9 million of non-cash items. During the year ended December 31, 2019, net cash used in operating activities primarily resulted from our net loss of $680.2 million, which was primarily attributable to our research and development activities and our selling, general and administrative expenses, partially offset by changes in our operating assets and liabilities of $6.7 million and $144.9 million of non-cash items.

Investing Activities

During the years ended December 31, 2020 and 2019, net cash provided by investing activities was $442.7 million and net cash used in investing activities was $143.2 million, respectively. During the years ended December 31, 2020 and 2019, we purchased marketable securities and had sales and maturities of our marketable securities as part of managing our cash and investments portfolio.

Financing Activities

During the years ended December 31, 2020 and 2019, net cash provided by financing activities was $426.8 million and $607.6 million, respectively. During the year ended December 31, 2020, we received $650.0 million of proceeds from our sale of 6,241,473 shares of our common stock to Biogen under the stock purchase agreement, of which $417.5 million

was recorded as equity and the remainder was recorded as revenue. During the year ended December 31, 2019, we received $560.9 million of net proceeds from our follow-on underwritten public offering, after deducting commissions and underwriting discounts and offering costs paid by us.

Operating Capital Requirements

We began to generate revenue from product sales in the second quarter of 2019 in conjunction with the launch of our first product, ZULRESSO. We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of our current and future product candidates, and seek regulatory approvals for those product candidates that are successfully developed; prepare for potential future commercialization of product candidates beyond ZULRESSO that are successfully developed and approved; begin to commercialize any such products, if successfully developed and approved; and continue our efforts to identify and develop new product candidates beyond our current portfolio. We also expect to incur significant costs associated with general operations. In addition, we expect to incur significant commercialization expenses for product sales, marketing and outsourced manufacturing with respect to ZULRESSO and any future products that are successfully developed and approved. Accordingly, we anticipate that we will need substantial additional funding in connection with our continuing operations.

Based on our current operating plans, we expect that our existing cash, cash equivalents and marketable securities as of December 31, 2020, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months from the filing date of this Annual Report. During that time, we expect to incur significant expenses as we continue to develop and commercialize our product and product candidates and pursue our strategic plan.

Our current operating plan does not contemplate other development activities that we may pursue or that all of our currently planned activities will proceed at the same pace, or that all of these activities will be fully initiated or completed during that time. We have based our estimates on assumptions that could change, and we may use our available capital resources sooner than we currently expect. We may also choose to change or increase our development, commercialization or other efforts. Because of the numerous risks and uncertainties associated with the development and commercialization of any product or product candidates, we are unable to estimate the amounts of increased capital outlays and operating expenditures necessary to complete development of our current or future product candidates or to commercialize any approved product.

Our future capital requirements will depend on many factors, including:

- the amount and timing of revenues from sales of ZULRESSO, which will be impacted by a number of factors, including: the rate, degree and level of market acceptance for ZULRESSO for the treatment of PPD in the U.S.; the impact of our April 2020 restructuring and the decision to focus our efforts primarily on geographies in the U.S. that have existing, active ZULRESSO treating sites; the continued availability of healthcare settings in those geographies to administer ZULRESSO and the ability and willingness of such healthcare settings to make sufficient capacity available; the level of reimbursement for both ZULRESSO and the infusion in the healthcare setting both by commercial and government payors, and the nature of limitations on coverage and reimbursement; the number of healthcare professionals willing to prescribe ZULRESSO and women with PPD who agree to be treated with ZULRESSO; and the scope, duration and timing of the impact of the COVID-19 pandemic;

- the timing and amount of costs associated with our commercialization of ZULRESSO;

- the initiation, progress, timing, costs, and results of ongoing, planned and future non-clinical studies and clinical trials for zuranolone and our other existing and future product candidates; the number and length of clinical trials required by regulatory authorities to support regulatory approval; and the costs of preparing regulatory filings;

- the length, severity and costs of disruptions, if any, associated with the COVID-19 pandemic on initiation and conduct of our clinical trials;

- the ability of zuranolone, SAGE-324, SAGE-718 and our other clinical-stage product candidates to progress through clinical development successfully; the timing, scope and outcome of regulatory filings, reviews and approvals of such product candidates, if we are successful in our development efforts; the scope and cost of any clinical trials or other commitments required post-approval for any approved products resulting from such development efforts, if successful; and the level, timing and amount of costs associated with permitted prelaunch activities and preparing for a potential future commercial launch of any such product candidate that is successfully developed and approved;

- the amounts we are entitled to receive, if any, from Biogen and Shionogi under our collaborations for cost-sharing, development, regulatory, and sales milestones, and royalty payments;

- the size of the PPD market and the portion of the population for which ZULRESSO may be prescribed; the size of the markets for which zuranolone and our other product candidates may be approved in the future, if successfully developed; the portion of the population in the approved indications for which our future products are actually prescribed; the rate and degree of market acceptance for our products, and the pricing, availability and level of reimbursement for our products;

- the number and characteristics of the product candidates we pursue in development and the nature and scope of our discovery and development programs;

- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;

- the extent to which we acquire or in-license other products and technologies; and

- our ability to establish any future collaboration arrangements on favorable terms, if at all.

Until such time, if ever, as we can generate substantial product revenue and achieve profitability, we expect to also finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other sources of funding. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or in light of other strategic considerations. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt 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 the ownership interest of our stockholders. 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 or research programs or to grant licenses on terms that may not be favorable to us. Raising funds in the current economic environment may present challenges. The COVID-19 pandemic initially caused major volatility in the stock market and has caused a significant global economic downturn. If the economic downturn caused by the pandemic continues for an extended period or surges in the number of cases of COVID-19 continue or worsen in the future, or if our business prospects are impaired or the capital markets disrupted for other reasons, additional capital may not be available to us on acceptable terms, or at all. If we are unable to raise additional funds through equity or debt financings or other means 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 products or product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations at December 31, 2020 and the effect such obligations are expected to have on our liquidity and cash flow in future periods:

	Payments Due by Period				
	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
	(in thousands)				
Operating lease commitments(1)	$ 32,225	$ 8,662	$ 18,003	$ 5,560	$ —
Total(1)(2)(3)	$ 32,225	$ 8,662	$ 18,003	$ 5,560	$ —

Amounts related to contingent milestone payments are not considered contractual obligations as they are contingent on the successful achievement of certain milestones. These contingent milestones may not be achieved. We have not included any of these amounts in the table as we cannot estimate or predict when, or if, these amounts will become due. We do not include amounts related to milestones for indications that we are no longer pursuing.

(1) We lease office space in three multi-tenant buildings in Cambridge, Massachusetts, consisting, as of December 31, 2020, of 63,017 square feet in the first building under an operating lease that will expire on August 31, 2024, 40,419 square feet in the second building under an operating lease that will expire on August 31, 2024 and 15,975 square feet in the third building under an operating lease that will expire on February 29, 2024. We lease office space in a multi-tenant building in Raleigh, North Carolina, consisting of 15,525 square feet under an operating lease that will expire on November 30, 2024. In March 2019, we entered into the Eighth Amendment to the lease for office space in the first building and thereby increased the amount of square feet of office space from 58,442 square feet to 63,017 square feet. The increase of 4,575 square feet began on June 1, 2019. The term for this additional space will expire on August 31, 2024. Effective February 1, 2021, we terminated the operating lease for the third building in Cambridge, Massachusetts. We may lease additional space prior to the expiration of our leases to meet the needs of the business. The minimum lease payments in the table do not include related common area maintenance costs or real estate taxes, because those costs are variable.

(2) We have acquired exclusive and non-exclusive rights to use, research, develop and offer for sale certain products and patents under license agreements with Washington University, CyDex Pharmaceuticals, Inc. and two license agreements with the Regents. The license agreements obligate us to make payments to the licensors for license fees, milestones, license maintenance fees and royalties. We are obligated to make future remaining milestone payments under these agreements of up to an aggregate of $23.9 million upon achieving certain milestones, related to clinical development, regulatory approvals and sales. During the year ended December 31, 2020, we recorded expense and accrued expenses of $1.3 million for milestones under these license agreements.

(3) We enter into contracts in the normal course of business with CROs for clinical trials, non-clinical research studies and testing, manufacturing and other services and products as part of general operations. These contracts generally provide for termination upon notice, and we believe that our non-cancelable obligations under these agreements are not material.

Off-Balance Sheet Arrangements

We do not currently have, nor did we have during the periods presented, any off-balance sheet arrangements as defined by SEC rules.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We had cash, cash equivalents and marketable securities of approximately $2.1 billion as of December 31, 2020. The primary objectives of our investment activities are to preserve principal, provide liquidity and maximize income without significantly increasing risk. Our primary exposure to market risk relates to fluctuations in interest rates, which are affected by changes in the general level of U.S. interest rates. Given the short-term nature of our cash, cash equivalents and marketable securities, we do not expect that a sudden change in market interest rates would have a material impact on our financial condition and/or results of operations. We do not own any derivative financial instruments.

We contract with vendors in foreign countries and have subsidiaries in Europe. As such, we have exposure to adverse changes in exchange rates of foreign currencies associated with our foreign transactions. We believe this exposure to be immaterial. We do not hedge against this exposure to fluctuations in exchange rates.

We do not believe that our cash, cash equivalents and marketable securities have significant risk of default or illiquidity. While we believe our cash, cash equivalents and marketable securities do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. In addition, we maintain significant amounts of cash, cash equivalents and marketable securities at one or more financial institutions that are in excess of federally insured limits.

Inflation generally affects us by increasing our cost of labor and clinical trial costs. We do not believe that inflation had a material effect on our results of operations during the year ended December 31, 2020.

Item 8. Financial Statements and Supplementary Data

The financial statements required to be filed pursuant to this Item 8 are appended to this Annual Report. An index of those financial statements is found in Item 15.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Securities Exchange Act of 1934) that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Securities Exchange Act of 1934 is (1) recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms and (2) accumulated and communicated to our management, including our President and Chief Executive Officer, who is our principal executive officer, and our Chief Financial Officer, who is also our principal financial and accounting officer, as appropriate, to allow timely decisions regarding required disclosure.

As of December 31, 2020, our management, with the participation of our principal executive officer and principal financial and accounting officer, evaluated the effectiveness of our disclosure controls and procedures. Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our principal executive officer and principal financial and accounting officer have concluded, based upon the evaluation described above, that, as of December 31, 2020, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934). Our internal control over financial reporting is a process designed under the supervision of our principal executive officer and principal financial officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external purposes in accordance with generally accepted accounting principles. Management evaluated the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control—Integrated Framework* (the 2013 Framework). Management, under the supervision and with the participation of the principal executive officer and principal financial officer, assessed the effectiveness of our internal control over financial reporting as of December 31, 2020 and concluded that it was effective based on those criteria.

The effectiveness of our internal control over financial reporting as of December 31, 2020 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report, which is included herein.

Changes in Internal Control over Financial Reporting

There were no changes to our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934) that occurred during the quarter ended December 31, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item is incorporated herein by reference to the information that will be contained in "Election of Directors" and "Corporate Governance" in our proxy statement related to the 2021 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year pursuant to General Instruction G(3) of Form 10-K.

Code of Business Conduct and Ethics. We have adopted a Code of Business Conduct and Ethics, which we call our Values Code, that applies to all of our employees, officers and directors, including those officers responsible for financial reporting. The current version of the Values Code, as may be amended from time to time, is available on our website at http://investor.sagerx.com/corporate-governance. A copy of the Values Code may also be obtained, free of charge, upon a request directed to: Sage Therapeutics, Inc., 215 First Street, Cambridge, Massachusetts 02142, Attention: SVP, General Counsel. We intend to disclose any amendment or waiver of a provision of the Values Code that applies to our principal executive officer, principal financial officer, or principal accounting officer, or persons performing similar functions, by posting such information on our website (available at www.sagerx.com) and/or in our public filings with the Securities and Exchange Commission.

Item 11. Executive Compensation

The information required by this Item is incorporated herein by reference to the information that will be contained in "Executive Officer and Director Compensation," "Compensation Committee Interlocks and Insider Participation" and "Compensation Committee Report" in our proxy statement related to the 2021 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year pursuant to General Instruction G(3) of Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item is incorporated herein by reference to the information that will be contained in "Securities Authorized for Issuance Under Equity Compensation Plans" and "Security Ownership of Certain beneficial Owners and Management" in our proxy statement related to the 2021 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year pursuant to General Instruction G(3) of Form 10-K.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item is incorporated herein by reference to the information that will be contained in "Corporate Governance" and "Certain Relationships and Related Party Transactions" in our proxy statement related to the 2021 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year pursuant to General Instruction G(3) of Form 10-K.

Item 14. Principal Accounting Fees and Services

The information required by this Item is incorporated herein by reference to the information that will be contained in "Ratification of Appointment of Auditors" in our proxy statement related to the 2021 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year pursuant to General Instruction G(3) of Form 10-K.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) The following documents are filed as part of this report:

(1) Financial Statements:

Report of Independent Registered Public Accounting Firm	F-1
Consolidated Balance Sheets	F-3
Consolidated Statements of Operations and Comprehensive Income (Loss)	F-4
Consolidated Statements of Changes in Stockholders' Equity	F-5
Consolidated Statements of Cash Flows	F-6
Notes to Consolidated Financial Statements	F-7

(2) Financial Statement Schedules:

All financial statement schedules have been omitted because they are not applicable, not required or the information required is shown in the financial statements or the notes thereto.

(3) Exhibits. The exhibits filed as part of this Annual Report are set forth on the Exhibit Index immediately following our consolidated financial statements. The Exhibit Index is incorporated herein by reference.

Item 16. Form 10-K Summary

Not applicable.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Sage Therapeutics, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Sage Therapeutics, Inc. and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of operations and comprehensive income (loss), of changes in stockholders' equity and of cash flows for each of the three years in the period ended December 31, 2020, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting 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. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding

prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Accrued Research and Development Costs

As described in Notes 2 and 4 to the consolidated financial statements, the Company has entered into various research and development contracts with research institutions and other companies. When billing terms under these contracts do not coincide with the timing of when the work is performed, management is required to make estimates of outstanding obligations to those third parties as of the end of the reporting period. Within accrued expenses, total accrued research and development costs amounted to $34.4 million as of December 31, 2020, which include accruals for these estimated ongoing research and development costs. Any accrual estimates are based on a number of factors, including management's knowledge of the progress towards completion of the research and development activities, invoicing to date under the contracts, communication from the research institution or other companies of any actual costs incurred during the period that have not yet been invoiced, and the costs included in the contracts. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period.

The principal considerations for our determination that performing procedures relating to accrued research and development costs is a critical audit matter are (i) the significant judgment by management in determining the accrued costs and (ii) a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating audit evidence for these accrued costs and the factors related to progress towards completion of the research and development activities, invoicing to date under the contracts, and communication from the research institution or other companies of any actual costs incurred during the period that have not yet been invoiced.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to accrued research and development costs, including controls over the review of contracts, accumulating information on actual costs incurred during the period, and assessment of progress towards completion of the research and development activities. These procedures also included, among others, (i) testing management's process for estimating accrued research and development costs; (ii) evaluating the appropriateness of the method used by management to develop the estimates; (iii) evaluating the reasonableness of the factors used in determining the estimates related to progress towards completion of specific research and development activities and the associated cost incurred for services the Company has not yet been invoiced or otherwise notified of the actual cost at period end; and (iv) testing the completeness and accuracy of the underlying data including total costs included within executed contracts and actual billed expenses under these contracts.

/s/PricewaterhouseCoopers LLP

Boston, Massachusetts
February 24, 2021

We have served as the Company's auditor since 2013.

Sage Therapeutics, Inc. and Subsidiaries
Consolidated Balance Sheets
(in thousands, except share and per share data)

	December 31, 2020	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 1,661,082	$ 126,705
Marketable securities	438,467	881,688
Prepaid expenses and other current assets	22,821	26,700
Total current assets	2,122,370	1,035,093
Property and equipment, net	6,755	9,126
Restricted cash	1,716	2,367
Right-of-use operating asset	25,064	33,771
Other long-term assets	3,341	3,793
Total assets	$ 2,159,246	$ 1,084,150
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 3,691	$ 15,266
Accrued expenses	54,851	86,618
Operating lease liability, current portion	8,662	10,244
Total current liabilities	67,204	112,128
Operating lease liability, net of current portion	19,438	26,848
Other liabilities	270	519
Total liabilities	86,912	139,495
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Preferred stock, $0.0001 par value per share; 5,000,000 shares authorized at December 31, 2020 and December 31, 2019; no shares issued or outstanding at December 31, 2020 and December 31, 2019	—	—
Common stock, $0.0001 par value per share; 120,000,000 shares authorized at December 31, 2020 and December 31, 2019; 58,311,444 and 51,880,227 shares issued at December 31, 2020 and December 31, 2019; 58,308,411 and 51,877,194 shares outstanding at December 31, 2020 and December 31, 2019	6	5
Treasury stock, at cost, 3,033 shares at December 31, 2020 and December 31, 2019	(400)	(400)
Additional paid-in capital	3,109,807	2,587,322
Accumulated deficit	(1,037,494)	(1,643,567)
Accumulated other comprehensive gain	415	1,295
Total stockholders' equity	2,072,334	944,655
Total liabilities and stockholders' equity	$ 2,159,246	$ 1,084,150

The accompanying notes are an integral part of these consolidated financial statements.

Sage Therapeutics, Inc. and Subsidiaries
Consolidated Statements of Operations and Comprehensive Income (Loss)
(in thousands, except share and per share data)

	Year Ended December 31,		
	2020	2019	2018
Product revenue, net	$ 6,700	$ 3,957	$ —
Collaboration revenue	1,107,500	2,911	90,273
Total revenue	1,114,200	6,868	90,273
Operating costs and expenses:			
Cost of goods sold	565	400	—
Research and development	292,714	368,815	282,107
Selling, general and administrative	196,952	345,777	201,404
Restructuring	27,743	—	—
Total operating costs and expenses	517,974	714,992	483,511
Income (loss) from operations	596,226	(708,124)	(393,238)
Interest income, net	9,597	27,804	20,334
Other income, net	250	82	22
Net income (loss)	$ 606,073	$ (680,238)	$ (372,882)
Net income (loss) per share—basic	$ 11.66	$ (13.38)	$ (8.08)
Net income (loss) per share—diluted	$ 11.43	$ (13.38)	$ (8.08)
Weighted average number of common shares outstanding—basic	51,983,188	50,833,837	46,121,194
Weighted average number of common shares outstanding—diluted	53,003,115	50,833,837	46,121,194
Comprehensive income (loss):			
Net income (loss)	$ 606,073	$ (680,238)	$ (372,882)
Other comprehensive items:			
Unrealized gain (loss) on marketable securities	(880)	1,810	(486)
Total other comprehensive gain (loss)	(880)	1,810	(486)
Total comprehensive income (loss)	$ 605,193	$ (678,428)	$ (373,368)

The accompanying notes are an integral part of these consolidated financial statements.

Sage Therapeutics, Inc. and Subsidiaries
Consolidated Statements of Changes in Stockholders' Equity
(in thousands, except share data)

	Common Stock		Treasury Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balances at December 31, 2017	42,002,934	$ 5	960	$ (113)	$ 1,066,059	$ (29)	$ (590,447)	$ 475,475
Issuance of common stock from exercises of stock options	824,188	—	—	—	27,014	—	—	27,014
Issuance of common stock under the employee stock purchase plan	19,687	—	—	—	2,705	—	—	2,705
Purchase of treasury stock	—	—	2,073	(98)	—	—	—	(98)
Stock-based compensation expense	—	—	—	—	100,993	—	—	100,993
Public offering of common stock, net of offering costs	4,032,012	—	—	—	631,154	—	—	631,154
Unrealized loss on available-for-sale securities	—	—	—	—	—	(486)	—	(486)
Vesting of restricted stock units, net of employee tax obligations	9,442	—	—	—	(904)	—	—	(904)
Net loss	—	—	—	—	—	—	(372,882)	(372,882)
Balances at December 31, 2018	46,888,263	5	3,033	(211)	1,827,021	(515)	(963,329)	862,971
Issuance of common stock from exercises of stock options	1,031,989	—	—	—	44,276	—	—	44,276
Issuance of common stock under the employee stock purchase plan	55,404	—	—	—	5,744	—	—	5,744
Purchase of treasury stock	—	—	—	(189)	—	—	—	(189)
Stock-based compensation expense	—	—	—	—	151,508	—	—	151,508
Public offering of common stock, net of offering costs	3,833,334	—	—	—	560,948	—	—	560,948
Unrealized gain on available-for-sale securities	—	—	—	—	—	1,810	—	1,810
Vesting of restricted stock units, net of employee tax obligations	68,204	—	—	—	(2,175)	—	—	(2,175)
Net loss	—	—	—	—	—	—	(680,238)	(680,238)
Balances at December 31, 2019	51,877,194	5	3,033	(400)	2,587,322	1,295	(1,643,567)	944,655
Issuance of common stock from exercises of stock options	117,025	—	—	—	5,082	—	—	5,082
Issuance of common stock under the employee stock purchase plan	72,719	—	—	—	4,936	—	—	4,936
Issuance of common stock under the Stock Purchase Agreement	6,241,473	1	—	—	417,499	—	—	417,500
Stock-based compensation expense	—	—	—	—	94,968	—	—	94,968
Unrealized loss on available-for-sale securities	—	—	—	—	—	(880)	—	(880)
Net income	—	—	—	—	—	—	606,073	606,073
Balances at December 31, 2020	58,308,411	$ 6	3,033	$ (400)	$ 3,109,807	$ 415	$ (1,037,494)	$ 2,072,334

The accompanying notes are an integral part of these consolidated financial statements.

Sage Therapeutics, Inc. and Subsidiaries
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
	2020	2019	2018
Cash flows from operating activities			
Net income (loss)	$ 606,073	$ (680,238)	$ (372,882)
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
Stock-based compensation expense	95,994	153,231	101,963
Premium on marketable securities	(1,736)	(3,674)	(215)
Amortization of premium (discount) on marketable securities	1,048	(6,966)	(9,892)
Depreciation	2,630	2,283	1,143
Changes in operating assets and liabilities:			
Prepaid expenses and other current assets	3,879	(4,781)	(15,462)
Other long-term assets	452	(3,793)	—
Right-of-use operating asset	6,397	8,168	—
Operating lease liabilities, current	36	2,804	—
Operating lease liabilities, non-current	(6,825)	(10,761)	—
Accounts payable	(11,511)	(18,783)	24,544
Accrued expenses and other liabilities	(32,157)	33,804	10,130
Net cash provided by (used in) operating activities	664,280	(528,706)	(260,671)
Cash flows from investing activities			
Proceeds from sales and maturities of marketable securities	901,749	1,171,270	974,757
Purchases of marketable securities	(458,720)	(1,308,675)	(1,484,358)
Purchases of property and equipment	(345)	(5,751)	(2,860)
Net cash provided by (used in) investing activities	442,684	(143,156)	(512,461)
Cash flows from financing activities			
Proceeds from stock option exercises and employee stock purchase plan issuances	9,262	48,850	29,108
Payment of employee tax obligations related to vesting of restricted stock units	—	(2,175)	(904)
Payments of offering costs	—	(328)	(340)
Proceeds from the sale of common stock under the Stock Purchase Agreement	417,500	—	—
Proceeds from public offerings of common stock, net of commissions and underwriting discounts	—	561,277	631,494
Net cash provided by financing activities	426,762	607,624	659,358
Net increase (decrease) in cash, cash equivalents and restricted cash	1,533,726	(64,238)	(113,774)
Cash, cash equivalents and restricted cash at beginning of period	129,072	193,310	307,084
Cash, cash equivalents and restricted cash at end of period	$ 1,662,798	$ 129,072	$ 193,310
Supplemental disclosure of non-cash operating and investing activities			
Purchases of property and equipment included in accounts payable	$ —	$ 65	$ 51
Right-of-use assets obtained in exchange for new operating lease liabilities	$ —	$ 872	$ —
Lease asset de-recognized upon lease cancellation	$ 2,310	$ —	$ —
Landlord tenant incentive included in other current assets	$ —	$ —	$ 229

The accompanying notes are an integral part of these consolidated financial statements.

1. Nature of the Business

Sage Therapeutics, Inc. ("Sage" or the "Company") is a biopharmaceutical company committed to developing and commercializing novel medicines with the potential to transform the lives of people with debilitating disorders of the brain.

The Company's first product, ZULRESSO® (brexanolone) CIV injection, is approved in the U.S. as a treatment for postpartum depression ("PPD") in adults. The Company launched ZULRESSO commercially in the U.S. in June 2019. The Company has a portfolio of other product candidates with a current focus on modulating two critical central nervous system ("CNS") receptor systems, GABA and NMDA. The GABA receptor family, which is recognized as the major inhibitory neurotransmitter in the CNS, mediates downstream neurologic and bodily function via activation of GABAA receptors. The NMDA-type receptors of the glutamate receptor system are a major excitatory receptor system in the CNS. Dysfunction in these systems is implicated in a broad range of CNS disorders. The Company is currently targeting diseases and disorders of the brain with three key focus areas: depression, neurology and neuropsychiatry.

The Company was incorporated under the laws of the State of Delaware on April 16, 2010, and commenced operations on January 19, 2011 as Sterogen Biopharma, Inc. On September 13, 2011, the Company changed its name to Sage Therapeutics, Inc.

The Company is subject to risks and uncertainties common to companies in the biotechnology and pharmaceutical industries, including, but not limited to, the risks associated with developing product candidates at each stage of non-clinical and clinical development; the challenges associated with gaining regulatory approval of such product candidates; the risks associated with the marketing and sale of pharmaceutical products; the potential for development by third parties of new technological innovations that may compete with the Company's products and product candidates; the dependence on key personnel; the challenges of protecting proprietary technology; the need to comply with government regulations; the high costs of drug development; the impact of the COVID-19 pandemic on its operations and financial condition; and the uncertainty of being able to secure additional capital when needed to fund operations.

Under Accounting Standards Update ("ASU") No. 2014-15, *Presentation of Financial Statements—Going Concern* (Subtopic 205-40), the Company has the responsibility to evaluate whether conditions and/or events raise substantial doubt about its ability to meet its future financial obligations as they become due within one year after the date that the financial statements are issued. The Company has incurred losses and negative cash flows from operations since its inception, except for net income of $606.1 million for the year ended December 31, 2020, because of revenue recognized under a license and collaboration agreement with Biogen MA Inc. ("BIMA") and Biogen International GmbH (collectively with BIMA, "Biogen"). As of December 31, 2020, the Company had an accumulated deficit of $1.0 billion. From its inception through December 31, 2020, the Company has received aggregate net proceeds of $2.8 billion from the sales of redeemable convertible preferred stock prior to its initial public offering, the issuance of convertible notes, and the sales of common stock in its initial public offering ("IPO") in July 2014, follow-on public offerings and the sale of stock to Biogen. The Company also received $1.0 billion in upfront payments under its collaborations with Biogen and Shionogi & Co., Ltd. ("Shionogi"). Until such time, if ever, as the Company can generate substantial product revenue and achieve profitability, the Company expects to finance its cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other sources of funding. If the Company is unable to raise additional funds through equity or debt financings or other sources of funding when needed, the Company may be required to delay, limit, reduce or terminate product development or future commercialization efforts or grant rights to develop and market products or product candidates that the Company would otherwise prefer to develop and market itself.

The Company expects that, based on its current operating plans, the Company's existing cash, cash equivalents and marketable securities will be sufficient to fund its currently planned operations for at least the next 12 months from the filing date of this Annual Report. At some point after that time, the Company anticipates it will require additional financing to fund its future operations. Even if the Company believes it has sufficient funds for its current or future

operating plans, the Company may seek to raise additional capital if market conditions are favorable or in light of other strategic considerations.

COVID-19

The ongoing COVID-19 pandemic has caused and may continue to cause major disruptions to businesses and economies worldwide. The rapid spread of COVID-19 in the U.S. has resulted in a significant reduction in patient demand for ZULRESSO and in the number of sites available to administer ZULRESSO. This has had a negative impact on the Company's revenue from sales of ZULRESSO. While there have been no material disruptions to date, any prolonged material disruptions to the work of the Company's employees, suppliers, contract manufacturers, or vendors as a result of the COVID-19 pandemic could negatively impact the Company's activities, availability of supplies, or operating results. Similarly, while to date the Company has not experienced significant impacts to the Company's development activities, any material disruption to the Company's development activities as a result of the COVID-19 pandemic may cause delays, increase the Company's costs and impact the Company's operating results. In addition, the COVID-19 pandemic initially caused major volatility in capital markets and has caused a significant global economic downturn, and the Company's ability to access the capital markets in the future could be negatively impacted if the adverse effects of the pandemic continue.

2. Summary of Significant Accounting Policies

The following is a summary of significant accounting policies followed in the preparation of these consolidated financial statements.

Basis of Presentation

The accompanying consolidated financial statements include those of the Company and its subsidiaries after elimination of all intercompany accounts and transactions. The accompanying consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the U.S. ("GAAP").

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 and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. The full extent to which the COVID-19 pandemic will directly or indirectly impact the Company's business, results of operations and financial condition, including sales, expenses, reserves and allowances, manufacturing, clinical trials, research and development costs and employee-related amounts, will depend on future developments that are highly uncertain, including developments related to the scope and duration of the pandemic; the duration and severity of precautionary measures taken to curb the spread of COVID-19, the length, location and frequency of surges or waves of COVID-19 cases and the timing and success of the roll-out of vaccines for COVID-19, and any return to normal business operations across the U.S. The Company has made estimates of the impact of the COVID-19 pandemic within its consolidated financial statements, and there may be changes to those estimates in future periods. Actual results could differ from those estimates.

Cash Equivalents

The Company considers all highly liquid investments with an original maturity of 90 days or less at the date of purchase to be cash equivalents. As of December 31, 2020, cash equivalents were comprised of commercial paper, money market funds and U.S. treasury securities. As of December 31, 2019, cash equivalents were comprised of commercial paper and money market funds.

Marketable securities

Marketable securities consist of investments with original maturities greater than 90 days. The Company has classified its investments with maturities beyond one year as short-term, based on their highly liquid nature and because such marketable securities represent the investment of cash that is available for current operations. The Company considers its investment portfolio of marketable securities to be available-for-sale. Accordingly, these investments are recorded at fair value, which is based on quoted market prices. Unrealized gains and losses are reported as the accumulated other comprehensive items in stockholders' equity. When the fair value is below the amortized cost of the asset, an estimate of expected credit losses is made. The credit-related impairment amount is recognized in net income; the remaining impairment amount and unrealized gains are reported as a component of accumulated other comprehensive income (loss) in stockholders' equity. Credit losses are recognized through the use of an allowance for credit losses account and subsequent improvements in expected credit losses are recognized as a reversal of an amount in the allowance account. If the Company has the intent to sell the security or it is more likely than not that the Company will be required to sell the security prior to recovery of its amortized cost basis, then the allowance for the credit loss is written-off and the excess of the amortized cost basis of the asset over its fair value is recorded in net income. Regardless of the Company's intent to sell a security, it performs additional analysis on all securities with unrealized losses to evaluate losses associated with the creditworthiness of the security. Credit losses are identified where the Company does not expect to receive cash flows sufficient to recover the amortized cost basis of a security.

Accounts Receivable

The Company's trade accounts receivable consist of amounts due from specialty distributors, specialty pharmacies, and medically-supervised healthcare settings that have been certified under a Risk Evaluation and Mitigation Strategy ("REMS") program in the U.S. related to sales of ZULRESSO and have standard payment terms that generally require payment within 30 to 90 days from the invoice date. The Company monitors the financial performance and creditworthiness of customers so that it can properly assess and respond to changes in their credit profile. The Company makes judgments as to its ability to collect outstanding receivables and provides an allowance for receivables when appropriate. Trade accounts receivable are included in prepaid expenses and other current assets on the consolidated balance sheets. As of December 31, 2020, the Company has not provided any allowance for bad debts against the trade accounts receivable, and the amount of trade accounts receivable was not significant.

Inventory

Inventory is stated at the lower of cost or estimated net realizable value with cost determined on a first-in, first-out basis. Inventory costs include raw materials, third-party contract manufacturing, third-party packaging services, and freight. Raw and intermediate materials that may be utilized for either research and development or commercial purposes are identical and, as a result, are both classified as inventory. Amounts in inventory associated with research and development are charged to research and development expense when the product enters the research and development process and can no longer be used for commercial purposes and, therefore, does not have an "alternative future use" as defined in authoritative guidance. The Company performs an assessment of the recoverability of capitalized inventory during each reporting period and writes down any excess and obsolete inventory to its estimated net realizable value in the period it is identified. If they occur, such impairment charges are recorded as a component of cost of goods sold in the consolidated statements of operations and comprehensive income (loss). Inventory is included in prepaid expenses and other current assets on the consolidated balance sheets and the amount was not significant as of December 31, 2020.

Prior to the initial date regulatory approval is received, costs related to the production of inventory are recorded as research and development expense on the Company's consolidated statements of operations and comprehensive income (loss) in the period incurred. The Company received FDA approval for ZULRESSO on March 19, 2019 and subsequently began capitalizing costs related to inventory manufacturing.

Property and Equipment

Property and equipment are recorded at cost and depreciated over their estimated useful lives using the straight-line method. Upon 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 credited or charged to income. Repairs and maintenance costs are expensed as incurred.

Intangible assets

The Company had no intangible assets as of December 31, 2018. The Company received FDA approval for ZULRESSO on March 19, 2019, and as a result, the Company was required to pay to CyDex Pharmaceuticals, Inc. ("CyDex") and The Regents of the University of California (the "Regents") milestone payments of $3.0 million and $0.5 million, respectively. At March 31, 2019, the amount of these milestones was capitalized as an intangible asset, and it is being amortized to cost of goods sold over the expected useful life of the asset.

Leases

The Company determines if an arrangement is a lease at contract inception. Operating lease assets represent the Company's right to use an underlying asset for the lease term and operating lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease 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 Company will exercise that option. The Company uses the implicit interest rate when readily determinable and uses the Company's 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 lease payments used to determine the Company's operating lease assets may include lease incentives, stated rent increases and escalation clauses linked to rates of inflation, when determinable, and are recognized in the Company's operating lease assets in the Company's consolidated balance sheets. In addition, the Company's contracts contain lease and non-lease components. The Company combines lease and non-lease components, which are accounted for together as lease components.

The Company's operating leases are reflected in the right-of-use operating asset; operating lease liability, current portion; and operating lease liability, net of current portion in the Company's consolidated balance sheets. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term. Short-term leases, defined as leases that have a lease term of 12 months or less at the commencement date, are excluded from this treatment and are recognized on a straight-line basis over the term of the lease.

Variable lease payments are the amounts owed by the Company to a lessor that are not fixed, such as reimbursement for common area maintenance and utilities costs for facility leases and maintenance and tolls for leased vehicles. Variable lease payments are expensed when 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. The impairment loss would be based on the excess of the carrying value of the impaired asset over its fair value, determined based on discounted cash flows. To date, the Company has not recorded any impairment losses on long-lived assets.

Cost of Goods Sold

Cost of goods sold includes direct and indirect costs related to the manufacturing and distribution of ZULRESSO, including third-party manufacturing costs, packaging services, freight, third-party royalties payable on the Company's net

product revenues and amortization of intangible assets associated with ZULRESSO. Cost of goods sold may also include period costs related to certain inventory manufacturing services, inventory adjustment charges, as well as manufacturing variances. In connection with the FDA approval of ZULRESSO on March 19, 2019, the Company subsequently began capitalizing inventory manufactured or purchased after this date. As a result, certain manufacturing costs associated with product shipments of ZULRESSO were expensed prior to FDA approval and, therefore, are not included in cost of goods sold during the years ended December 31, 2020 and 2019.

Research and Development Costs and Accruals

Research and development expenses are comprised of costs incurred in performing research and development activities, including salaries and benefits, overhead costs, depreciation, contract services and other related costs. Research and development costs are expensed to operations as the related obligation is incurred.

The Company has entered into various research and development contracts with research institutions and other companies both inside and outside of the U.S. These agreements are generally cancelable, and related costs are recorded as research and development expenses as incurred. The Company records accruals for estimated ongoing research and development costs. When billing terms under these contracts do not coincide with the timing of when the work is performed, the Company is required to make estimates of outstanding obligations to those third parties as of the end of the reporting period. Any accrual estimates are based on a number of factors, including the Company's knowledge of the progress towards completion of the research and development activities, invoicing to date under the contracts, communication from the research institution or other companies of any actual costs incurred during the period that have not yet been invoiced, and the costs included in the contracts. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the estimates made by the Company. The historical accrual estimates made by the Company have not been materially different from the actual costs.

Patent Costs

The Company expenses patent costs as incurred and classifies such costs as selling, general and administrative expenses in the accompanying consolidated statements of operations and comprehensive income (loss).

Stock-Based Compensation

The Company recognizes compensation expense for stock-based awards, including grants of stock options and restricted stock units, made to employees and non-employee directors based on the estimated fair value on the date of grant, over the requisite service period. The Company recognizes stock-based compensation expense for only the portion of awards that are expected to vest.

Effective January 1, 2019, the Company recognizes compensation expense for stock-based awards, including grants of stock options and restricted stock units, made to non-employee consultants based on the estimated fair value on the date of grant, over the requisite service period. Through December 31, 2018, the Company recognized compensation expense for stock-based awards granted to non-employee consultants based on the fair value of the awards on each date on which the awards vest. Compensation expense was recognized over the vesting period, provided that services were rendered by such non-employee consultants during that time. At the end of each financial reporting period, the fair value of unvested options was re-measured using the then-current fair value of the common stock of the Company and updated assumptions using the Black-Scholes option-pricing model.

For awards that vest upon achievement of a performance condition, the Company recognizes compensation expense when achievement of the performance condition is met or during the period from which meeting the condition is deemed probable until the expected date of meeting the performance condition.

The fair value of each option grant is estimated using the Black-Scholes option-pricing model. For the years ended December 31, 2019 and 2018, the Company estimated its expected volatility using a weighted average of the historical volatility of publicly-traded peer companies and the volatility of its common stock. Effective January 1, 2020, the

Company began using the historical volatility of only its common stock, as there is adequate historical data for the duration of the expected term.

The expected term of the options granted to employees and non-employee directors by the Company has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. Through December 31, 2018, the expected term of the options granted to non-employee consultants was determined based on the contractual term of the options, and since January 1, 2019, the "simplified" method has been used. 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 time periods approximately equal to the expected term of the award. The expected dividend yield is based on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future.

The Company also applies a forfeiture rate in order to calculate stock-based compensation expense. Expected forfeitures are based on the historical experience of the Company and management's expectations of future forfeitures. To the extent actual forfeitures differ from the estimates, the difference is recorded as a cumulative adjustment in the period in which the estimates are revised.

Treasury Stock

The Company records treasury stock at cost. Treasury stock consists of shares received from an employee as consideration for exercises of stock options.

Basic and Diluted Net Income (Loss) Per Share

Basic net income (loss) per share is computed by dividing the net income (loss) by the weighted average number of shares of common stock that were outstanding during the period. Diluted net income (loss) per share is computed by adjusting the weighted average number of shares of common stock that were outstanding during the period for the dilutive effect of common stock equivalents outstanding for the period by using the treasury stock method.

For periods in which the Company has reported net losses, diluted net loss per share is the same as basic net loss per share, because dilutive common shares are not assumed to have been issued if their effect is anti-dilutive. The Company reported a net loss for the years ended December 31, 2019 and 2018.

Risks and Uncertainties

The product candidates developed by the Company require approvals from the U.S. Food and Drug Administration or foreign regulatory agencies prior to commercial sales. There can be no assurance that the current and future product candidates of the Company will receive the necessary approvals. If the Company fails to successfully complete clinical development and generate results sufficient to file for regulatory approval or is denied approval or approval is delayed, it may have a material adverse impact on the Company's business and its financial statements.

Concentration of Credit Risk and of Significant Suppliers

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash, cash equivalents and marketable securities. The Company maintains accounts for all cash and cash equivalents at accredited financial institutions, in amounts that exceed federally insured limits. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company is dependent on third-party manufacturers to supply products for research and development activities in its programs. The Company relies and expects to continue to rely on a small number of manufacturers to supply it with its requirements for the active pharmaceutical ingredients and formulated drugs related to these programs. These programs could be adversely affected by a significant interruption in the supply of active pharmaceutical ingredients and formulated drugs.

Income Taxes

The Company accounts for income taxes under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and

liabilities are measured using enacted rates in effect for the year in which these temporary differences are expected to be recovered or settled. Valuation allowances are provided if, based on the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

The Company accounts for uncertain tax positions in accordance with the provisions of Accounting Standards Codification ("ASC") Topic 740, "*Income Taxes*" ("Topic 740"). When uncertain tax positions exist, the Company recognizes the tax benefit of tax positions to the extent that the benefit will more likely than not be realized. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. The Company accrues for potential interest and penalties related to unrecognized tax benefits in income tax expense.

Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets and liabilities carried at fair value are classified and disclosed in one of the following three categories:

Level 1 — Quoted market prices in active markets for identical assets or liabilities.

Level 2 — Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The Company's cash equivalents and marketable securities at December 31, 2020 and 2019 were carried at fair value, determined according to the fair value hierarchy; see Note 3, Fair Value Measurements.

The carrying amounts reflected in the consolidated balance sheets for accounts payable and accrued expenses approximate their fair values due to their short-term maturities at December 31, 2020 and 2019, respectively.

Segment Data

The Company manages its operations as a single segment for the purposes of assessing performance and making operating decisions. The singular focus of the Company is developing and commercializing novel medicines with the potential to transform the lives of people with debilitating disorders of the brain.

Comprehensive Income (Loss)

Comprehensive income (loss) includes net income (loss) and other changes in stockholders' equity that result from transactions and economic events other than those with stockholders.

Revenue Recognition

The Company generates revenue from the sale of ZULRESSO, which was approved by the FDA in March 2019 and the Company subsequently began selling in June 2019, and from collaboration and supply agreements with the Company's collaborators. To date, revenue from collaboration agreements has come from initial, upfront payments allocated to licenses of intellectual property delivered to the Company's collaborators and from the supply of material for clinical trials under a supply agreement.

Under ASC Topic 606, "*Revenue from Contracts with Customers*" ("Topic 606"), an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price,

including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. Arrangements that include rights to additional goods or services that are exercisable at a customer's discretion are generally considered options. The Company assesses if these options provide a material right to the customer and if so, they are considered performance obligations. The exercise of a material right may be accounted for as a contract modification or as a continuation of the contract for accounting purposes.

For contracts determined to be within the scope of Topic 606, the Company assesses whether the goods or services promised within each contract are distinct to identify those that are performance obligations. This assessment involves subjective determinations and requires management to make judgments about the individual promised goods or services and whether such are separable from the other aspects of the contractual relationship. Promised goods and services are considered distinct provided that: (i) the customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer and (ii) the entity's promise to transfer the good or service to the customer is separately identifiable from other promises in the contract.

The Company allocates the transaction price (the amount of consideration it expects to be entitled to from a customer in exchange for the promised goods or services) to each performance obligation and recognizes the associated revenue when (or as) each performance obligation is satisfied. The Company's estimate of the transaction price for each contract includes all variable consideration to which the Company expects to be entitled.

Collaboration and license revenue

In assessing whether a promised good or service is distinct in the evaluation of a collaboration or license arrangement subject to Topic 606, the Company considers factors such as the research, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. The Company also considers the intended benefit of the contract in assessing whether a promised good or service is separately identifiable from other promises in the contract. If a promised good or service is not distinct, the Company is required to combine that good or service with other promised goods or services until it identifies a bundle of goods or services that is distinct.

The transaction price is then determined and allocated to the identified performance obligations in proportion to their standalone selling prices ("SSP") on a relative SSP basis. SSP is determined at contract inception and is not updated to reflect changes between contract inception and when the performance obligations are satisfied. Determining the SSP for performance obligations requires significant judgment. In developing the SSP for a performance obligation, the Company considers applicable market conditions and relevant entity-specific factors, including factors that were contemplated in negotiating the agreement with the customer and estimated costs. In certain circumstances, the Company may apply the residual method to determine the SSP of a good or service if the standalone selling price is considered highly variable or uncertain. The Company validates the SSP for performance obligations by evaluating whether changes in the key assumptions used to determine the SSP will have a significant effect on the allocation of arrangement consideration between multiple performance obligations.

If the consideration promised in a contract includes a variable amount, the Company estimates the amount of consideration to which it will be entitled in exchange for transferring the promised goods or services to a customer. The Company determines the amount of variable consideration by using the expected value method or the most likely amount method. The Company includes the unconstrained amount of estimated variable consideration in the transaction price. The amount included in the transaction price is constrained to the amount for which it is probable that a significant reversal of cumulative revenue recognized will not occur. At the end of each subsequent reporting period, the Company re-evaluates the estimated variable consideration included in the transaction price and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis in the period of adjustment.

If an arrangement includes development and regulatory milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated

milestone value is included in the transaction price. Milestone payments that are not within the Company's control or the licensee's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received.

In determining the transaction price, the Company adjusts consideration for the effects of the time value of money if the timing of payments provides the Company with a significant benefit of financing. The Company does not assess whether a contract has a significant financing component if the expectation at contract inception is such that the period between payment by the licensees and the transfer of the promised goods or services to the licensees will be one year or less. The Company assessed its arrangements with Shionogi and Biogen and concluded that a significant financing component does not exist for either arrangement. For arrangements with licenses of intellectual property that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, the Company recognizes royalty revenue and sales-based milestones at the later of (i) when the related sales occur, or (ii) when the performance obligation to which the royalty has been allocated has been satisfied.

The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) each performance obligation is satisfied at a point in time or over time, and if over time this is based on the use of an output or input method. Revenue from the Company's collaboration agreement with Shionogi has come from initial, upfront consideration upon execution of the agreement and for the supply of drug product for Shionogi's clinical trials. Revenue from the Company's collaboration agreement with Biogen has come from initial, upfront consideration related to the execution of the license and collaboration agreement. For additional information, refer to Note 6, Collaboration Agreements.

Product revenue

The Company recognizes product revenues, net of variable consideration related to certain allowances and accruals that are determined using the expected value method, in its consolidated financial statements at the point in time when control transfers to the customer, which is typically when the product has been delivered to the customer's location. The amount included in the transaction price is constrained to the amount for which it is probable that a significant reversal of cumulative revenue recognized will not occur. The Company's only performance obligation identified for ZULRESSO is to deliver the product to the location specified by the customer's order. The Company records shipping and handling costs associated with delivery of product to its customers within selling, general and administrative expenses on its consolidated statements of operations and comprehensive income (loss). The Company expenses incremental costs of obtaining a contract as incurred if the expected amortization period of the asset would be less than one year. If the Company were to incur incremental costs with an amortization period greater than a year, such costs would be capitalized as contract assets, as they are expected to be recovered, and would be expensed by amortizing on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates. The Company did not have any contract assets (unbilled receivables) at December 31, 2020, as customer invoicing generally occurs before or at the time of revenue recognition. The Company did not have any contract liabilities at December 31, 2020, as the Company did not

receive any payments in advance of satisfying its performance obligations to its customers. Amounts billed or invoiced are included in prepaid expenses and other current assets on the consolidated balance sheets.

The Company records reserves, based on contractual terms, for the following components of variable consideration related to product sold during the reporting period, as well as its estimate of product that remains in the distribution channel inventory of its customers at the end of the reporting period. On a quarterly basis, the Company updates its estimates and records any necessary material adjustments in the period they are identified.

Chargebacks: The Company estimates chargebacks from its customers who directly purchase the product from the Company for discounts resulting from contractual commitments to sell products to eligible healthcare settings at prices lower than the list prices charged to its customers. Customers charge the Company for the difference between what they pay to the Company for the product and the selling price to the eligible healthcare settings. Reserves for chargebacks consist of credits that the Company expects to issue for units that remain in the distribution channel inventories at the end of each reporting period that the Company expects will be sold to eligible healthcare settings, and chargebacks that customers have claimed, but for which the Company has not yet issued a credit.

Government Rebates: The Company is subject to discount obligations under government programs, including Medicaid. The Company records reserves for rebates in the same period the related product revenue is recognized, resulting in a reduction of ZULRESSO product revenues and a current liability that is included in accrued expenses on its consolidated balance sheets. The Company's liability for these rebates consists of invoices received for claims from prior quarters that have not been paid or for which an invoice has not yet been received, estimates of claims for the current quarter, and estimates of future claims that will be made for product that has been recognized as revenue, but which remains in the distribution channel at the end of each reporting period.

Trade Discounts and Allowances: The Company generally provides customary invoice discounts on ZULRESSO sales to its customers for prompt payment and the Company pays fees for sales order management, data, and distribution services. The Company estimates its customers will earn these discounts and fees and deducts these discounts and fees in full from gross ZULRESSO revenues and accounts receivable at the time the Company recognizes the related revenues.

Financial Assistance: The Company provides voluntary financial assistance programs to patients with commercial insurance that have coverage and reside in states that allow financial assistance. The Company estimates the financial assistance amounts for ZULRESSO and records any such amounts within accrued expenses on its consolidated balance sheets. The calculation of the accrual for financial assistance is based on an estimate of claims and the cost per claim that the Company expects to receive using demographics for patients who have registered and been approved for assistance. Any adjustments are recorded in the same period the related revenue is recognized, resulting in a reduction of product revenue and the establishment of a current liability, which is included as a component of accrued expenses on the consolidated balance sheets.

Product Returns: Consistent with industry practice, the Company offers product return rights to direct customers for damaged, defective or expiring product, provided it is within a specified period around the product expiration date as set forth in the Company's return goods policy. The Company estimates the amount of its product sales that may be returned by its customers and records this estimate as a reduction of revenue in the period the related product revenue is recognized, as well as a reserve within accrued expenses on the consolidated balance sheets. The Company has experienced no product returns to date. The Company will update its estimated refund liability, on at least a quarterly basis, based on actual shipments of ZULRESSO subject to contractual return rights, changes in expectations about the amount of estimated refunds or actual returns.

Collaborative arrangements

The Company analyzes its collaboration arrangements to assess whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities and therefore within the scope of ASC Topic 808, *Collaborative Arrangements* ("Topic 808"). This assessment is performed throughout the life of the arrangement based on changes in the responsibilities of all parties in the arrangement. For collaboration arrangements within the scope of Topic 808 that contain multiple elements, the Company first determines which elements of the collaboration are deemed to be within the scope of Topic 808 and which elements of the collaboration are more reflective of a vendor-customer relationship and therefore within the scope of Topic 606. For elements of collaboration arrangements that are accounted for pursuant to Topic 808, an appropriate recognition method is determined and applied consistently, either by analogy to authoritative accounting literature or by applying a reasonable and rational policy election. For those elements of the arrangement that are accounted for pursuant to Topic 606, the Company applies the five-step model described above.

Recently Issued Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU No. 2016-02, *Leases (Topic 842)*, which replaced the existing guidance in ASC Topic 840, "Leases" ("Topic 840"). The FASB subsequently issued the following amendments to ASU No. 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 No. 2016-02 effective January 1, 2019 (ASU No. 2016-02 as amended, "ASC 842"). The ASC 842 standard generally requires lessees to recognize operating and financing lease liabilities and corresponding right-of-use assets on the consolidated balance sheets and to provide enhanced disclosures surrounding the amount, timing and uncertainty of cash flows arising from leasing arrangements. The Company adopted ASC 842 using the modified retrospective approach with an effective date of January 1, 2019 for leases that existed on that date. Prior period results continue to be presented under Topic 840 based on the accounting standards originally in effect for such periods. Presentation of leases within the consolidated statements of operations and comprehensive income (loss) and consolidated statements of cash flows is generally consistent with the former lease accounting guidance. The Company elected the package of practical expedients permitted under the transition guidance and as such, the adoption of this ASU did not change the classification of any of the Company's leases. The Company elected to combine lease and non-lease components, elected not to record leases with an initial term of 12 months or less on the consolidated balance sheets and will recognize the associated lease payments in the consolidated statements of operations and comprehensive income (loss) on a straight-line basis over the lease term. On the adoption date, $44.2 million was recognized as total lease liabilities, and $41.1 million was recognized as total right-of-use assets on the Company's consolidated balance sheet.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. This standard amends the impairment model by requiring entities to use a forward-looking approach based on expected losses to estimate credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. For available-for-sale debt securities, entities are required to recognize an allowance for credit losses rather than a reduction in carrying value of the asset. Entities are no longer permitted to consider the length of time that fair value has been less than amortized cost when evaluating when credit losses should be recognized. The Company adopted the standard on the required effective date of January 1, 2020, on a prospective basis. This guidance did not have a significant impact on the Company's consolidated financial statements and related disclosures.

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*. This standard modifies certain disclosure requirements on fair value measurements. The Company adopted the standard on the required effective date of January 1, 2020. This guidance did not have a significant impact on the Company's consolidated financial statements and related disclosures.

In November 2018, the FASB issued ASU No. 2018-18, *Clarifying the Interaction between Topic 808 and Topic 606*. This standard clarifies that certain transactions between collaborative arrangement participants should be accounted

for as revenue under Topic 606 when the collaborative arrangement participant is a customer for a promised good or service that is distinct within the collaborative arrangement. The guidance also precludes entities from presenting amounts related to transactions with a collaborative arrangement participant that is not a customer as revenue, unless those transactions are directly related to third-party sales. The Company adopted the standard on the required effective date of January 1, 2020. This guidance did not have a significant impact on the Company's consolidated financial statements and related disclosures.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes.* This standard enhances and simplifies various aspects of the income tax accounting guidance in Topic 740, including requirements related to hybrid tax regimes, the tax basis step-up in goodwill obtained in a transaction that is not a business combination, separate financial statements of entities not subject to tax, the intra-period tax allocation exception to the incremental approach, ownership changes in investments, changes from a subsidiary to an equity method investment, interim-period accounting for enacted changes in tax law, and the year-to-date loss limitation in interim-period tax accounting. This guidance will be effective for the Company for annual and interim periods beginning after December 31, 2020. The Company is currently in the process of evaluating the impact to its consolidated financial statements.

Other accounting standards that have been issued or proposed by the FASB or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on the Company's consolidated financial statements upon adoption.

3. Fair Value Measurements

The Company's cash equivalents are classified within Level 1 and Level 2 of the fair value hierarchy. The Company's investments in marketable securities are classified within Level 2 of the fair value hierarchy.

The fair values of the Company's marketable securities are based on prices obtained from independent pricing sources. Consistent with the fair value hierarchy described in Note 2, Summary of Significant Accounting Policies, securities with validated quotes from pricing services are reflected within Level 2, as they are primarily based on observable pricing for similar assets or other market observable inputs. Typical inputs used by these pricing services include, but are not limited to, reported trades, benchmark yields, issuer spreads, bids, offers or estimates of cash flow, prepayment spreads and default rates.

The following tables summarize the Company's cash equivalents and marketable securities as of December 31, 2020 and 2019:

	December 31, 2020			
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	(in thousands)			
Cash equivalents:				
Cash equivalents	$ 1,661,082	$ 1,637,609	$ 23,473	$ —
Total cash equivalents	1,661,082	1,637,609	23,473	—
Marketable securities:				
U.S. government securities	160,588	—	160,588	—
U.S. corporate bonds	123,107	—	123,107	—
International corporate bonds	57,676	—	57,676	—
U.S. commercial paper	45,963	—	45,963	—
International commercial paper	51,133	—	51,133	—
Total marketable securities	438,467	—	438,467	—
	$ 2,099,549	$ 1,637,609	$ 461,940	$ —

	December 31, 2019			
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	(in thousands)			
Cash equivalents:				
Cash equivalents	$ 126,705	$ 65,414	$ 61,291	$ —
Total cash equivalents	126,705	65,414	61,291	—
Marketable securities:				
U.S. government securities	205,328	—	205,328	—
U.S. corporate bonds	429,845	—	429,845	—
International corporate bonds	142,998	—	142,998	—
U.S. commercial paper	52,261	—	52,261	—
International commercial paper	51,256	—	51,256	—
Total marketable securities	881,688	—	881,688	—
	$ 1,008,393	$ 65,414	$ 942,979	$ —

During the years ended December 31, 2020 and 2019, there were no transfers among the Level 1, Level 2 and Level 3 categories.

The following tables summarize the gross unrealized gains and losses of the Company's marketable securities as of December 31, 2020 and 2019:

	December 31, 2020				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Credit Losses	Fair Value
	(in thousands)				
Assets:					
U.S. government securities	$ 160,589	$ 11	$ (12)	$ —	$ 160,588
U.S. corporate bonds	122,882	240	(15)	—	123,107
International corporate bonds	57,485	200	(9)	—	57,676
U.S. commercial paper	45,963	—	—	—	45,963
International commercial paper	51,133	—	—	—	51,133
	$ 438,052	$ 451	$ (36)	$ —	$ 438,467

	December 31, 2019			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(in thousands)			
Assets:				
U.S. government securities	$ 205,172	$ 176	$ (20)	$ 205,328
U.S. corporate bonds	429,148	797	(100)	429,845
International corporate bonds	142,568	457	(27)	142,998
U.S. commercial paper	52,252	14	(5)	52,261
International commercial paper	51,253	5	(2)	51,256
	$ 880,393	$ 1,449	$ (154)	$ 881,688

As of December 31, 2020 and 2019, all marketable securities held by the Company had remaining contractual maturities of one year or less, except for corporate bonds with a fair value of $5.1 million and $137.1 million, respectively, that had maturities of one to two years.

As of December 31, 2020 and 2019, the marketable securities in a loss position have a maturity of less than one year.

There have been no impairments of the Company's assets measured and carried at fair value during the years ended December 31, 2020 and 2019.

4. Balance Sheet Components

Property and Equipment, net

Property and equipment, net consists of the following:

	December 31,	
	2020	2019
	(in thousands)	
Computer hardware and software	$ 2,758	$ 2,830
Furniture and equipment	1,865	1,828
Leasehold improvements	9,220	8,967
	13,843	13,625
Less: Accumulated depreciation	(7,088)	(4,499)
	$ 6,755	$ 9,126

Depreciation expense for the years ended December 31, 2020, 2019 and 2018 was $2.6 million, $2.3 million and $1.1 million, respectively.

The useful life for computer hardware and software is three years, furniture and equipment is five years and leasehold improvements is the lesser of the useful life or the term of the respective lease.

Accrued Expenses

Accrued expenses consist of the following:

	December 31,	
	2020	2019
	(in thousands)	
Accrued research and development costs	$ 34,398	$ 46,940
Restructuring	203	-
Employee-related	14,566	22,011
Professional services	5,184	16,720
Other	500	947
	$ 54,851	$ 86,618

5. Leases, Commitments and Contingencies

Operating Leases

The Company has leases for office space and certain equipment. All of the leases recorded on the consolidated balance sheets are operating leases. The Company's leases have remaining lease terms ranging from less than one year to nearly four years. Some of the leases include options to extend the leases for up to five years. These options were not included for the purpose of determining the right-of-use assets and associated lease liabilities as the Company determined

that the renewal of these leases is not reasonably certain so only the original lease term was taken into consideration. The leases do not include any restrictions or covenants that had to be accounted for under the lease guidance.

As of January 1, 2018, the Company leased office space in two multi-tenant buildings in Cambridge, Massachusetts, consisting of 54,943 square feet in the first building under an operating lease that will expire on August 15, 2024 and 19,805 square feet in the second building under an operating lease that will expire on February 28, 2022.

In April 2018, the Company entered into the First Amendment to the lease for office space in the second multi-tenant building and thereby increased the amount of square feet of office space from 19,805 square feet to 40,419 square feet, an increase of 20,614 square feet, consisting of (i) 13,481 square feet that began on August 1, 2018, and (ii) 7,133 square feet that began on October 1, 2018. The term for this additional space will expire on August 31, 2024. Additionally, the term of the existing lease was extended from February 28, 2022 until August 31, 2024.

In May 2018, the Company entered into a lease for office space in a multi-tenant building in Raleigh, North Carolina. The amount of square feet of office space is 15,525 square feet and the lease period began on September 1, 2018. The term for this space will expire on November 30, 2024.

In October 2018, the Company entered into the Seventh Amendment to the lease for office space in the first building and thereby increased the amount of square feet of office space from 54,943 square feet to 58,442 square feet. The increase of 3,499 square feet began on December 1, 2018. The term for this additional space will expire on August 31, 2024.

In December 2018, the Company entered into a lease for office space in a third multi-tenant building in Cambridge, Massachusetts. The amount of square feet of office space is 15,975 square feet and the lease period began on March 1, 2019. The term for this lease was initially scheduled to expire on February 29, 2024. Effective February 1, 2021, the Company terminated this lease.

In March 2019, the Company entered into the Eighth Amendment to the lease for office space in the first multi-tenant building and thereby increased the amount of square feet of office space from 58,442 square feet to 63,017 square feet. The increase of 4,575 square feet began on June 1, 2019. The term for this additional space will expire on August 31, 2024.

From June 2018 to January 2019, the Company entered into leases for vehicles for field-based employees. These leases were determined to be operating leases and a right-of-use operating asset in the amount of $5.3 million was recorded on the balance sheet upon implementation of the new lease standard on January 1, 2019. The leases were for a term of three years and were to expire on various dates through January 31, 2022. During the year ended December 31, 2020, these leases were terminated as part of the April 2020 restructuring (see Note 13, Restructuring), and the remaining asset of $2.3 million and the liabilities related to these leases were de-recognized upon termination of the leases, and the restricted cash of $0.7 million related to these leases was returned to the Company by the lessor.

The following table shows the amounts of operating leases in the balance sheets as of December 31, 2020 and 2019:

Balance sheet location	Balance sheet caption	December 31, 2020	December 31, 2019
		(in thousands)	
Assets			
Right-of-use operating asset	Right-of-use operating asset	$ 25,064	$ 33,771
Liabilities			
Current operating lease liabilities	Operating lease liability, current portion	8,662	10,244
Long-term operating lease liabilities	Operating lease liability, net of current portion	19,438	26,848
Total operating lease liabilities		$ 28,100	$ 37,092

Lease expense by lease type recognized during the years ended December 31, 2020 and 2019 was as follows:

	Year Ended December 31, 2020	Year Ended December 31, 2019
	(in thousands)	
Operating lease cost	$ 8,838	$ 9,804
Variable lease cost	2,285	2,675
Short-term lease cost	74	438
	$ 11,197	$ 12,917

Rent expense for the year ended December 31, 2018 was $6.5 million.

The Company made an accounting policy election not to apply the recognition requirements to short-term leases. The Company recognizes the lease payments for short-term leases as expense on a straight-line basis over the lease term, and variable lease payments in the period in which the obligation for those payments is incurred.

The minimum lease payments are expected to be as follows:

Years Ending December 31,	(In thousands)
2021	$ 8,662
2022	8,898
2023	9,105
2024	5,560
2025	-
Thereafter	-
Total lease payments	32,225
Less imputed interest	(4,125)
Present value of operating lease liabilities	$ 28,100

The weighted average remaining lease term and weighted average discount rate of the Company's operating leases are as follows:

	December 31, 2020
Weighted average remaining lease term in years	3.61
Weighted average discount rate	7.5%

The interest rate implicit in lease contracts is typically not readily determinable and as such, the Company uses its incremental borrowing rate based on the information available at the lease commencement date, which represents an internally developed rate that would be incurred to borrow, on a collateralized basis, over a similar term, an amount equal to the lease payments in a similar economic environment.

Supplemental disclosure of cash flow information related to the Company's operating leases included in cash flows used by operating activities in the consolidated statements of cash flows is as follows:

	Year Ended December 31,	
	2020	2019
	(in thousands)	
Cash paid for amounts included in the measurement of lease liabilities	$ 9,231	$ 9,946
Right-of-use assets obtained in exchange for lease obligations:		
Operating leases	$ -	$ 872
Lease asset de-recognized upon lease cancellation		
Operating leases	$ 2,310	$ -

During the year ended December 31, 2019, other than the initial adoption of the lease standard that required right-of-use assets and lease liabilities to be recorded, one right-of-use asset was recorded arising from new lease liabilities. In March 2019, the Company entered into the Eighth Amendment to the lease for office space in the first building and thereby increased the amount of square feet of office space from 58,442 square feet to 63,017 square feet. The increase of 4,575 square feet began on June 1, 2019. The term for this additional space will expire on August 31, 2024.

During the year ended December 31, 2020, the one right-of-use asset was de-recognized. The leases for vehicles for field-based employees were terminated as part of the April 2020 restructuring (see Note 13, Restructuring), and the remaining asset of $2.3 million and the liabilities related to these leases were de-recognized upon termination of the leases.

License Agreements

CyDex License Agreement

In September 2015, the Company and CyDex, a wholly owned subsidiary of Ligand Pharmaceuticals, Inc., amended and restated their existing commercial license agreement. Under the terms of the commercial license agreement as amended and restated, CyDex has granted to the Company an exclusive license to CyDex's Captisol drug formulation technology and related intellectual property for the manufacture of pharmaceutical products incorporating brexanolone and the Company's compound known as SAGE-689, and the development and commercialization of the resulting products in the treatment, prevention or diagnosis of any disease or symptom in humans or animals other than (i) the ocular treatment of any disease or condition with a formulation, including a hormone; (ii) topical ocular treatment of inflammatory conditions; (iii) treatment and prophylaxis of fungal infections in humans; and (iv) any ocular treatment for retinal degeneration. The Company is required to pay a royalty to CyDex on sales of brexanolone and will be required to pay a royalty on sales of SAGE-689, if such product candidate is successfully developed in the future. Royalty rates are in the low single digits based on levels of net sales. As of December 31, 2020, the Company has paid to CyDex $1.0 million for licensing fees, which was recorded as research and development expense.

Under the amended and restated license agreement with CyDex, the Company agreed to make milestone payments on the achievement of clinical development and regulatory milestones in the amount of up to $0.8 million in clinical milestones and up to $3.8 million in regulatory milestones for each of the first two fields with respect to brexanolone; up to $1.3 million in clinical milestones and up to $8.5 million in regulatory milestones for each of the third and fourth fields with respect to brexanolone; and up to $0.8 million in clinical milestones and up to $1.8 million in regulatory milestones for one field with respect to SAGE-689. As of December 31, 2020, the Company has recorded research and development expense and made cash payments of $2.3 million related to these clinical development and regulatory milestones; has recorded research and development expense and accrued expenses of $1.3 million related to these clinical development milestones and has recorded an intangible asset and made a cash payment of $3.0 million related to these regulatory milestones.

For the year ended December 31, 2018, additional clinical development milestones were met for the brexanolone program under the license agreement with CyDex, and accordingly, the Company recorded research and development expense and made cash payments totaling $0.8 million.

For the year ended December 31, 2019, the Company recorded an intangible asset of $3.0 million related to a regulatory milestone for the brexanolone program under the license agreement with CyDex.

For the year ended December 31, 2020, additional clinical development milestones were met for the brexanolone program under the license agreement with CyDex, and accordingly, the Company recorded research and development expense and accrued expenses totaling $1.3 million.

As of December 31, 2020, the Company has made no milestone payments related to clinical development or regulatory milestones for SAGE-689 under the license agreement with CyDex.

University of California License Agreements

In October 2013, the Company entered into a non-exclusive license agreement with the Regents under which the Company was granted a non-exclusive license to certain clinical data and clinical material related to brexanolone for use in the development and commercialization of biopharmaceutical products in the licensed field, including status epilepticus and postpartum depression. In May 2014, the license agreement was amended to add the treatment of essential tremor to the licensed field of use, materials and milestone fee provisions of the agreement. The Company paid to the Regents clinical development milestones of $0.1 million prior to December 31, 2015; no other milestones are outstanding under this non-exclusive license agreement. The Company is required to pay royalties of less than 1% on net sales for a period of fifteen years following the sale of the first product developed using the data and materials. The license will terminate on the earlier to occur of (i) 27 years after the effective date or (ii) 15 years after the last-derived product is first commercially sold.

In June 2015, the Company entered into an exclusive license agreement with the Regents whereby the Company was granted an exclusive license to certain patent rights related to the use of allopregnanolone to treat various diseases. In exchange for such license, the Company paid an upfront payment of $50,000 and will make payments of $15,000 for annual maintenance fees until the calendar year following the first sale, if any, of a licensed product. The Company is obligated to make milestone payments following the achievement of specified regulatory and sales milestones of up to $0.7 million and $2.0 million in the aggregate, respectively. Following the first sale of a licensed product, the Company is required to pay royalties at a low single digit percentage of net sales of licensed products, subject to specified minimum annual royalty amounts. Unless terminated by operation of law or by acts of the parties under the terms of the agreement, the license agreement will terminate when the last-to-expire patents or last-to-be abandoned patent applications expire, whichever is later. As of December 31, 2020, the Company has recorded research and development expense and made cash payments of $0.3 million related to these regulatory and sales milestones; and has recorded an intangible asset and made a cash payment of $0.5 million related to these regulatory and sales milestones.

For the year ended December 31, 2018, the Company recorded research and development expense and made cash payments of $0.2 million related to regulatory milestones under the license agreements with the Regents.

For the year ended December 31, 2019, the Company recorded an intangible asset and made a cash payment of $0.5 million related to a regulatory milestone under the license agreements with the Regents.

For the year ended December 31, 2020, the Company did not record any expense or make any milestone or royalty payments under the license agreements with the Regents.

Washington University License Agreement

In November 2013, the Company entered into a license agreement with Washington University whereby the Company was granted exclusive, worldwide rights to develop and commercialize a novel set of neuroactive steroids developed by Washington University. In exchange for development and commercialization rights, the Company paid an upfront, non-refundable payment of $50,000 and is required to pay an annual license maintenance fee of $15,000 on each subsequent anniversary date, until the first Phase 2 clinical trial for a licensed product is initiated. The Company is obligated to make milestone payments to Washington University based on achievement of clinical development and regulatory milestones of up to $0.7 million and $0.5 million, respectively. Additionally, the Company fulfilled its obligation to issue to Washington University 47,619 shares of common stock on December 13, 2013. The fair value of these shares of $0.1 million was recorded as research and development expense in 2013. As of December 31, 2020, the Company has recorded research and development expense and made a cash payment of $50,000 related to these clinical development milestones.

The Company is obligated to pay royalties to Washington University at rates in the low single digits on net sales of licensed products covered under patent rights and royalties at rates in the low single digits on net sales of licensed products not covered under patent rights. Additionally, the Company has the right to sublicense and is required to make payments at varying percentages of sublicensing revenue received, initially in the mid-teens and descending to the mid-single digits over time.

For the years ended December 31, 2020, 2019 and 2018, the Company did not record any expense or make any milestone payments under the license agreement with Washington University.

6. Collaboration Agreements

Shionogi

In June 2018, the Company entered into a strategic collaboration with Shionogi for the clinical development and commercialization of zuranolone for the treatment of major depressive disorder (“MDD”) and other potential indications in Japan, Taiwan and South Korea (“the Existing Partner Territory”). In October 2018, the Company entered into a supply agreement with Shionogi for zuranolone clinical material.

Under the terms of the collaboration agreement, Shionogi will be responsible for all clinical development, regulatory filings and commercialization of zuranolone for MDD, and potentially other indications, in the Existing Partner Territory. Shionogi was required to make an upfront payment to the Company of $90.0 million, and the Company will be eligible to receive additional payments of up to $485.0 million if certain regulatory and commercial milestones are achieved by Shionogi. The potential future milestone payments include up to $70.0 million for the achievement of specified regulatory milestones, up to $30.0 million for the achievement of specified commercialization milestones, and up to $385.0 million for the achievement of specified net sales milestones. The Company is eligible to receive tiered royalties on sales of zuranolone in the Existing Partner Territory, if development efforts are successful, with tiers averaging in the low to mid-twenty percent range, subject to other terms of the agreement. Shionogi has also granted to the Company certain rights to co-promote zuranolone in Japan. The Company maintains exclusive rights to develop and commercialize zuranolone outside of the Existing Partner Territory. The upfront cash payment and any payments for milestones and royalties are non-refundable and non-creditable. Due to the uncertainty of pharmaceutical development and the high historical failure rates generally associated with drug development, the Company may not receive any milestone payments or any royalty payments from Shionogi.

The Company concluded that Shionogi meets the definition to be accounted for as a customer because the Company is delivering intellectual property and know-how rights for the zuranolone program in support of territories in which the parties are not jointly sharing the risks and rewards. In addition, the Company determined that the Shionogi collaboration met the requirements to be accounted for as a contract, including that it was probable that the Company will collect the consideration to which the Company was entitled in exchange for the goods or services that will be delivered to Shionogi.

In determining the appropriate amount of revenue to be recognized under Topic 606, the Company performed the following steps: (i) identified the promised goods or services in the contract; (ii) determined whether the promised goods or services are performance obligations including whether they are distinct in the context of the contract; (iii) measured the transaction price, including the constraint on variable consideration; (iv) allocated the transaction price to the performance obligations; and (v) recognized revenue when (or as) the Company satisfied each performance obligation.

The Company determined that the performance obligations in the contract included the license to zuranolone and the supply of certain materials during the clinical development phase, which includes the supply of active pharmaceutical ingredient, or API. The performance obligation related to the license to zuranolone was determined to be distinct from other performance obligations and therefore was a separate performance obligation for which control was transferred upon signing. The obligation to provide certain clinical materials, including API for use during the development period, was determined to be a separate performance obligation. Given that Shionogi is not obligated to purchase any minimum amount or quantities of commercial API, the supply of API to Shionogi for commercial use was determined to be an option for Shionogi, rather than a performance obligation of the Company at contract inception and will be accounted for if and when exercised. The Company also determined that there was no separate material right in connection with the supply of API for commercial use as the expected pricing was not at a discount. Given this fact pattern, the Company has concluded the agreement has two performance obligations.

Under the clinical supply agreement, the Company will manufacture and supply to Shionogi (i) clinical quantities of API reasonably required by Shionogi for the development of licensed products in the Shionogi territory under the collaboration and license agreement and (ii) quantities of drug product reasonably required for use by Shionogi in Phase 1 clinical trials of zuranolone in the Shionogi territory under the collaboration and license agreement, in the quantities agreed to by the parties. Collaboration revenue from the clinical supply agreement, which excludes the $90.0 million upfront payment, pertains to the clinical material sold under the terms of the clinical supply agreement. The Company records the costs related to the clinical supply agreement in research and development expense on its consolidated statements of operations and comprehensive income (loss).

The Company completed the evaluation of the standalone selling prices of each of the performance obligations and determined that the standalone selling price of the license performance obligation was $90.0 million. The Company recognized the transaction price allocated to the license performance obligation of $90.0 million as revenue during the quarter upon delivery of the license to Shionogi and resulting ability of Shionogi to use and benefit from the license, which was in the three months ended June 30, 2018. The remaining transaction price related to the performance obligation for the supply of certain clinical material is not significant. The potential milestone payments that the Company is eligible to receive were excluded from the transaction price, as all milestone amounts were fully constrained based on the

probability of achievement. The Company will re-evaluate the transaction price at the end of each reporting period and as uncertain events are resolved or other changes in circumstances occur, and, if necessary, adjust its estimate of the transaction price.

Biogen

In November 2020, the Company entered into a global collaboration and license agreement with Biogen (the "Biogen Collaboration Agreement") to jointly develop and commercialize SAGE-217 products for MDD, PPD and other disorders and SAGE-324 products for essential tremor and other disorders. Concurrently, the Company also entered into a Stock Purchase Agreement with BIMA (the "Biogen Stock Purchase Agreement") to purchase shares of the Company's common stock. The Biogen Collaboration Agreement became effective on December 28, 2020 (the "Effective Date").

Under the terms of the Biogen Collaboration Agreement, the Company granted Biogen co-exclusive licenses to develop and commercialize SAGE-217 products and SAGE-324 products (each, a "Product Class" and together, the "Licensed Products") in the U.S., an exclusive license to develop and commercialize SAGE-217 products in all countries of the world other than the Existing Partner Territory (the "Biogen Territory"), and an exclusive license to develop and commercialize SAGE-324 products in all countries of the world other than the U.S.

In connection with the effectiveness of the Biogen Collaboration Agreement and the closing of the sale of shares to Biogen in December 2020, the Company received $1.5 billion in consideration, comprised of an upfront payment of $875.0 million and the $650.0 million purchase price for 6,241,473 newly issued shares of the Company's common stock (the "Biogen Shares").

The Company is eligible to receive additional payments of up to $1.6 billion if certain regulatory and commercial milestones are achieved. The potential future milestone payments for SAGE-217 products include up to $475.0 million for the achievement of specified regulatory and commercial milestones and up to $300.0 million for the achievement of specified net sales milestones. The potential future milestone payments for SAGE-324 products include up to $520.0 million for the achievement of specified regulatory and commercial milestones and up to $300.0 million for the achievement of specified net sales milestones. The Company is also eligible to receive tiered royalties on net sales of SAGE-217 products and SAGE-324 products in the Biogen Territory at percentage rates ranging from the high teens to low twenties.

Due to the uncertainty of pharmaceutical development and the high historical failure rates generally associated with drug development, the Company may never receive any milestone payments or any royalty payments under the Biogen Collaboration Agreement.

Development and commercialization activities in the U.S. will be conducted pursuant to plans agreed to by the Company and Biogen and overseen by a joint steering committee that will consist at all times of an equal number of representatives of each party. The Company and Biogen will share equally in the costs for development and commercialization, as well as the profits and losses, in the U.S., subject to the Company's opt-out right described below. Biogen will be solely responsible for all development activities and costs related to any development and commercialization of SAGE-217 products and SAGE-324 products for the Biogen Territory and the Company will receive royalties on any sales in the Biogen Territory, as mentioned above.

The Company will supply API and bulk drug product for the Biogen Territory and active pharmaceutical ingredient and final bulk drug product for the U.S. to support development and commercialization activities. Biogen has the right to assume manufacturing responsibilities for active pharmaceutical ingredient at any time during the agreement and will, within a reasonable period of time after the Effective Date, assume manufacturing responsibility for bulk drug product for the Biogen Territory.

Unless terminated earlier, the Biogen Collaboration Agreement will continue on a Licensed Product-by-Licensed Product and country-by-country basis until the date on which (a) in any country in the Biogen Territory, the royalty term has expired for all Licensed Products in a Product Class in such country, and (b) for the U.S., the parties agree to permanently cease to commercialize all Licensed Products in a Product Class. Biogen also has the right to terminate the

Biogen Collaboration Agreement for convenience upon advance written notice. The Company has an opt-out right to convert the co-exclusive licenses in the U.S. to an exclusive license to Biogen on a Product Class-by-Product Class basis. Following the exercise of the opt-out right, the Company would no longer share equally in the profits and losses in the U.S. and would be entitled to receive certain royalty payments at percentage rates ranging from the high teens to low twenties additional sales milestones.

The Company concluded that the Biogen Collaboration Agreement and the Biogen Stock Purchase Agreement should be combined and treated as a single arrangement for accounting purposes as the agreements were entered into contemporaneously and in contemplation of one another. The Company determined that the combined agreements had elements that were within the scope of Topic 606 and Topic 808.

As of the Effective Date, the Company identified the following promises in the Biogen Collaboration Agreement that were evaluated under the scope of Topic 606: delivery of (i) a co-exclusive license for SAGE-217 products in the U.S.; (ii) an exclusive license for SAGE-217 products in the Biogen Territory; (iii) a co-exclusive license for SAGE-324 products in the U.S.; (iv) an exclusive license for SAGE-324 products in all countries of the world other than the U.S.; (v) the clinical manufacturing supply of active pharmaceutical ingredient and bulk drug product for SAGE-217 products in the Biogen Territory; and (vi) the clinical manufacturing supply of active pharmaceutical ingredient and bulk drug product for SAGE-324 products in the Biogen Territory.

The Company also evaluated whether certain options outlined within the Biogen Collaboration Agreement represented material rights that would give rise to a performance obligation and concluded that none of the options convey a material right to Biogen and therefore are not considered separate performance obligations within the Biogen Collaboration Agreement.

The Company assessed the above promises and determined that the co-exclusive licenses for SAGE-217 products and SAGE-324 products in the U.S. are reflective of a vendor-customer relationship and therefore represent performance obligations within the scope of Topic 606. The co-exclusive license for SAGE-217 products and SAGE-324 products in the U.S. are considered functional intellectual property and distinct from other promises under the contract. The exclusive licenses for SAGE-217 products and SAGE-324 products in the Biogen Territory are considered functional licenses that are distinct in the context of the Biogen Collaboration Agreement as Biogen can benefit from the licenses on its own or together with other readily available resources. As the co-exclusive licenses in the U.S. and the exclusive licenses in the Biogen Territory are delivered at the same time, they are considered one performance obligation at contract inception. The clinical manufacturing supply of active pharmaceutical ingredient and bulk drug product for SAGE-217 products and SAGE-324 products for the Biogen Territory are considered distinct in the context of the Biogen Collaboration Agreement as Biogen can benefit from the manufacturing services together with the licenses transferred by the Company at the inception of the agreement. Therefore, each represents a separate performance obligation within a contract with a customer under the scope of Topic 606 at contract inception.

The Company considers the collaborative activities associated with the co-development, co-commercialization, and co-manufacturing of SAGE-217 products and SAGE-324 products in the U.S. to be separate units of account within the scope of Topic 808 as the Company and Biogen are both active participants in the development and commercialization activities and are exposed to significant risks and rewards that are dependent on the development and commercial success of the activities in the arrangement.

The Company determined the transaction price under Topic 606 at the inception of the Biogen Collaboration Agreement to be $1.1 billion, consisting of the upfront payment of $875.0 million plus $232.5 million in excess proceeds from the equity investment under the Biogen Stock Purchase Agreement, when measured at fair value, plus future variable consideration for manufacturing supply of clinical active pharmaceutical ingredient and bulk drug product for the Biogen Territory. The amount of variable consideration related to the future manufacturing services was not material. The Company determined that any variable consideration related to clinical development and regulatory milestones is deemed to be fully constrained and therefore excluded from the transaction price due to the high degree of uncertainty and risk associated with these potential payments, as the Company determined that it could not assert that it was probable that a significant reversal in the amount of cumulative revenue recognized will not occur. The Company also determined that

royalties and sales milestones relate solely to the licenses of intellectual property and are therefore excluded from the transaction price under the sales- or usage-based royalty exception of Topic 606. Revenue related to these royalties and sales milestones will only be recognized when the associated sales occur, and relevant thresholds are met.

As noted above, the Company identified three performance obligations in the Biogen Collaboration Agreement: (i) the delivery of the co-exclusive licenses for SAGE-217 products and SAGE-324 products in the U.S. and the exclusive licenses for SAGE-217 products and SAGE-324 products in the Biogen Territory; (ii) the clinical manufacturing supply of active pharmaceutical ingredient and bulk drug product for SAGE-217 products in the Biogen Territory; and (iii) the clinical manufacturing supply of the active pharmaceutical ingredient and bulk drug product for SAGE-324 products in the Biogen Territory. The selling price of each performance obligation in the Biogen Collaboration Agreement was determined based on the Company's SSP with the objective of determining the price at which it would sell such an item if it were to be sold regularly on a standalone basis. The Company allocated the variable consideration related to the manufacturing obligations to the future clinical supply of SAGE-217 products and SAGE 324 products in the Biogen Territory and the remaining fixed consideration to the license obligation. The variable consideration related to the manufacturing obligations was not material. As such, the entirety of the $1.1 billion fixed consideration of the transaction price has been allocated to the transfer of the co-exclusive licenses for SAGE-217 products and SAGE-324 products in the U.S. and the exclusive licenses for SAGE-217 products and SAGE-324 products in the Biogen Territory. The Company recognizes revenue for the license performance obligations at a point in time, that is upon transfer of the licenses to Biogen. As control of these licenses was transferred on the Effective Date and Biogen could begin to use and benefit from the licenses, the Company recognized $1.1 billion of license revenue during the year ended December 31, 2020 under the Biogen Collaboration Agreement. The Company will recognize revenue for the clinical manufacturing supply obligations at a point in time, that is upon the delivery of the supply to Biogen.

Accounting for the Biogen Stock Purchase Agreement

In connection with the execution of the Biogen Collaboration Agreement, the Company and BIMA entered into the Biogen Stock Purchase Agreement. Pursuant to the Biogen Stock Purchase Agreement, the Company sold the Biogen Shares to BIMA at a price of approximately $104.14 per share, which represented a 40 percent premium over the 30-day volume-weighted average share price as of the last trading day prior to the date the Biogen Collaboration Agreement and Biogen Stock Purchase Agreement were executed in November 2020, for aggregate consideration of $650.0 million. The sale of the shares to BIMA closed on December 31, 2020.

The Biogen Stock Purchase Agreement includes certain standstill provisions, lock-up restrictions, and a voting agreement with respect to the Biogen Shares. Pursuant to the terms of the Biogen Stock Purchase Agreement, BIMA has agreed not to, and to cause its affiliates not to, directly or indirectly acquire the Company's securities, seek or propose a tender or exchange offer or merger between the Company and Biogen, solicit proxies or consents with respect to any matter, or undertake other specified actions, in each case subject to specified conditions. The standstill restrictions terminate on the earliest of (i) a specified regulatory milestone under the Biogen Collaboration Agreement, (ii) the date one year following the termination of the Biogen Collaboration Agreement and (iii) the seventh anniversary of the Effective Date. BIMA has also agreed not to, and to cause its affiliates not to, sell or transfer any of the Biogen Shares for a period of eighteen months and to limit sales and transfers of the Biogen Shares for an additional eighteen month period, in each case subject to specified conditions and exceptions.

The Company determined the fair value of the common shares issued using an option pricing valuation model to take into consideration the holding period restrictions. The fair value of the Company's common stock was considered a level 2 fair value measurement within the fair value hierarchy. The most significant assumptions within the model are the Company's stock price, the term of the restrictions and the stock price volatility, which is based upon a blend of historical and implied volatility of the Company's stock. Based on the fair value adjustments made by management, the fair value of the shares issued was determined to be $417.5 million, which was $232.5 million less than the proceeds received from BIMA for the issuance of the Company's common stock under the Biogen Stock Purchase Agreement. As such, the $232.5 million in excess proceeds has been included in the $1.1 billion transaction price of the Biogen Collaboration Agreement determined above.

7. Preferred Stock

The Board of Directors of the Company is authorized, without action by the stockholders, to designate and issue up to an aggregate of 5,000,000 shares of preferred stock in one or more series. The Board of Directors of the Company can designate the rights, preferences and privileges of the shares of each series and any of its qualifications, limitations or restrictions. The Board of Directors of the Company may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of common stock. As of December 31, 2020 and 2019, the Company had no shares of preferred stock issued or outstanding and preferred stock was classified as stockholders' equity.

8. Common Stock

As of December 31, 2020 and 2019, the Company authorized 120,000,000 shares of common stock with a par value of $0.0001 per share.

Each share of common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Common stockholders are entitled to receive dividends, as may be declared by the Board of Directors, if any. As of December 31, 2020 and 2019, no dividends have been declared.

On February 13, 2018, the Company completed the sale of 4,032,012 shares of its common stock at a price to the public of $164.00 per share, resulting in net proceeds to the Company of $631.2 million after deducting underwriting discounts and commissions and offering costs paid by the Company.

On February 27, 2019, the Company completed the sale of 3,833,334 shares of its common stock at a price to the public of $150.00 per share, resulting in net proceeds to the Company of $560.9 million after deducting underwriting discounts and commissions and offering costs paid by the Company.

On December 31, 2020, the Company completed the sale of 6,241,473 shares of its common stock in a private placement to Biogen at a price to the public of approximately $104.14 per share, resulting in aggregate gross proceeds to the Company of $650.0 million.

As of December 31, 2020, the Company had received 3,033 shares of the Company's common stock from a then employee as proceeds for exercises of stock options. The total cost of shares held in treasury at December 31, 2020 was $0.4 million.

9. Stock-Based Compensation

Equity Plans

On July 2, 2014, the stockholders of the Company approved the 2014 Stock Option and Incentive Plan (the "2014 Plan"), which became effective immediately prior to the completion of the Company's IPO. The 2014 Plan provides for the grant of restricted stock awards, restricted stock units, incentive stock options and non-statutory stock options. The 2014 Plan replaced the Company's 2011 Stock Option and Grant Plan (the "2011 Plan"). The Company no longer grants stock options or other awards under its 2011 Plan, but any options outstanding under the 2011 Plan remain outstanding and effective in accordance with their terms.

The 2014 Plan provides for an annual increase, to be added on the first day of each fiscal year, by up to 4% of the Company's outstanding shares of common stock as of the last day of the prior year. On January 1, 2020, 2,075,087 shares of common stock, representing 4% of the Company's outstanding shares of common stock as of December 31, 2019, were added to the 2014 Plan.

On December 15, 2016, the Board of Directors of the Company (the "Board") approved the 2016 Inducement Equity Plan (as amended and restated, the "2016 Plan"). The 2016 Plan provides for the grant of equity awards to individuals who have not previously been an employee or a non-employee director of the Company to induce them to accept employment and to provide them with a proprietary interest in the Company. On September 20, 2018, the Board amended the 2016 Plan to increase the total number of shares reserved for issuance by 1,200,000 shares.

Terms of equity grants, including vesting requirements, are determined by the Board or the Compensation Committee of the Board, subject to the provisions of the applicable plan. Options granted by the Company, that are not performance-based, are considered time-based because they generally vest based on the continued service of the grantee with the Company during a specified period following grant. These awards, when granted to employees, generally vest ratably over four years, with 25% cliff vesting at the one-year anniversary. All option awards expire in 10 years after the date of grant.

As of December 31, 2020, the total number of shares reserved under all equity plans was 12,535,574 and the total number of shares available for future issuance under all equity plans was 4,420,049 shares.

Restricted Stock Units

The table below summarizes activity relating to time-based restricted stock units and performance restricted stock units:

	Shares
Outstanding as of December 31, 2019	333,243
Granted	1,022,276
Vested	—
Forfeited	(397,824)
Outstanding as of December 31, 2020	957,695

During the year ended December 31, 2017, the Company granted 32,500 time-based restricted stock units to certain employees of the Company. The Company did not grant time-based restricted stock units prior to January 1, 2017. These time-based restricted stock units vested ratably over two years, with vesting of 50% at both the one-year and two-year anniversary of the grant date, which was in February 2018 and 2019, respectively. The fair value of the time-based restricted stock units that vested during the years ended December 31, 2019 and 2018 was $2.0 million and $2.6 million, respectively. No time-based restricted stock units vested during the year ended December 31, 2020.

During the year ended December 31, 2020, the Company granted 550,890 time-based restricted stock units to certain employees of the Company. These time-based restricted stock units will vest over two years, with 25% vesting at the one-year anniversary of the grant date and 75% vesting at the two-year anniversary of the grant date, which will be in April 2021 and April 2022, respectively. During the years ended December 31, 2019 and 2018, the Company granted no time-based restricted stock units.

During the year ended December 31, 2018, the Company granted 71,400 performance restricted stock units to certain employees of the Company. The milestones for these grants were not met, and accordingly, these grants were cancelled.

During the year ended December 31, 2019, the Company granted 393,539 performance restricted stock units to employees of the Company. These performance restricted stock units are related to the achievement of certain clinical and regulatory development milestones related to product candidates and commercial milestones.

During the year ended December 31, 2020, the Company granted 471,386 performance restricted stock units to employees of the Company. These performance restricted stock units are related to the achievement of certain clinical and regulatory development milestones related to product candidates and commercial milestones.

Recognition of stock-based compensation expense associated with performance restricted stock units commences when the performance condition is considered probable of achievement, using management's best estimates, which consider the inherent risk and uncertainty regarding the future outcomes of the milestones.

During the year ended December 31, 2019, one milestone for grants of performance restricted stock units was achieved. This milestone represents 18% of the performance restricted stock units that were granted during the year ended December 31, 2019. The fair value of performance restricted stock units that vested during the year ended December 31, 2019 was $11.1 million.

No performance restricted stock units vested during the years ended December 31, 2020 and 2018.

At December 31, 2020, 957,695 restricted stock units were both outstanding and unvested, and the total unrecognized stock-based compensation expense related to those awards was $58.2 million.

Option Rollforward

The table below summarizes activity related to time-based and performance-based stock options:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Life (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2019	8,163,113	$ 106.30	7.75	$ 87,972
Granted	1,544,915	56.03		
Exercised	(118,325)	43.34		
Forfeited	(2,431,873)	121.28		
Outstanding as of December 31, 2020	7,157,830	$ 91.41	6.91	$ 167,242
Vested and expected to vest as of December 31, 2020	6,469,905	$ 90.94	6.79	$ 153,562
Exercisable as of December 31, 2020	4,674,438	$ 89.51	6.09	$ 120,030

At December 31, 2020, the Company had unrecognized stock-based compensation expense related to its unvested time-based stock option awards of $120.5 million, which is expected to be recognized over the remaining weighted average vesting period of 1.76 years.

The intrinsic value of stock options exercised during the years ended December 31, 2020, 2019 and 2018 was $2.1 million, $119.1 million and $98.3 million, respectively.

Performance-Based Stock Options

During the year ended December 31, 2018, the Company granted 524,003 options to employees to purchase shares of common stock that contain performance-based vesting criteria, primarily related to the achievement of certain clinical and regulatory development milestones related to product candidates and commercial milestones. During the years ended December 31, 2020 and 2019, the Company granted no options to employees to purchase shares of common stock that contain performance-based vesting criteria.

Recognition of stock-based compensation expense associated with performance-based stock options commences when the performance condition is considered probable of achievement, using management's best estimates, which consider the inherent risk and uncertainty regarding the future outcomes of the milestones.

During the year ended December 31, 2018, a milestone was achieved under a stock option granted to a consultant. The milestone was related to the consummation of a licensing or corporate partnering arrangement. During the year ended December 31, 2018, the Company recognized stock-based compensation expense related to this milestone of $6.9 million.

During the year ended December 31, 2018, one milestone was achieved under stock options granted to employees. This milestone represents 33% of the performance-based options that were granted during the year ended December 31, 2017. During the year ended December 31, 2018, the Company recognized stock-based compensation expense related to this milestone of $4.4 million.

During the year ended December 31, 2018, the remaining milestone for the performance-based option grants that were made during the years ended December 31, 2016 and December 31, 2015 was not met, and accordingly, those options were cancelled. This milestone represents 50% and 35% of the performance-based option grants that were made during the years ended December 31, 2016 and December 31, 2015, respectively. The Company recognized no stock-based compensation expense related to this milestone.

During the year ended December 31, 2019, one commercial milestone was achieved under stock options granted to employees. Stock options with this milestone were granted during the years ended December 31, 2018 and 2017, respectively. This milestone represents 20% and 33% of the performance-based option grants that were made during the years ended December 31, 2018 and 2017, respectively. During the year ended December 31, 2019, the Company recognized stock-based compensation expense related to this milestone of $16.3 million.

During the year ended December 31, 2020, no milestones were achieved under performance-based options. During the year ended December 31, 2020, one milestone for the performance-based option grants that were made during the year ended December 31, 2018 was not met, and accordingly, those options were cancelled. This milestone represents 19% of the performance-based option grants that were made during the year ended December 31, 2018. The Company recognized no stock-based compensation expense related to this milestone.

As of December 31, 2020, 2019 and 2018, for performance-based option grants that were outstanding, the achievement of the milestones that had not been met that are the criteria for vesting of performance-based stock options was not considered probable, and therefore no expense has been recognized related to these awards in the years ended December 31, 2020, 2019 and 2018, respectively.

As of December 31, 2020, 288,575 performance-based stock options were both outstanding and unvested, and the total unrecognized stock-based compensation expense related to those awards was $20.6 million.

Stock-Based Compensation Expense

Stock-based compensation expense recognized during the years ended December 31, 2020, 2019 and 2018 was as follows:

	Year Ended December 31,		
	2020	2019	2018
	(in thousands)		
Research and development	$ 42,370	$ 62,931	$ 50,871
Selling, general and administrative	51,836	90,300	51,092
Restructuring	1,788	—	—
	$ 95,994	$ 153,231	$ 101,963

Stock-based compensation expense recognized during the years ended December 31, 2020, 2019 and 2018 by award type was as follows:

	Year Ended December 31,		
	2020	2019	2018
	(in thousands)		
Stock options	$ 90,064	$ 140,517	$ 100,342
Restricted stock units	4,904	10,992	651
Employee stock purchase plan	1,026	1,722	970
	$ 95,994	$ 153,231	$ 101,963

The stock-based compensation expense recorded for the restructuring in the year ended December 31, 2020 is the incremental amount related to modifying the exercise period for outstanding, vested option grants that had been made to employees who were terminated in the restructuring.

For stock option awards, the fair value is estimated at the grant date using the Black-Scholes option-pricing model, taking into account the terms and conditions upon which options are granted. The fair value of the options is amortized on a straight-line basis for awards to employees over the requisite service period of the awards. For awards to non-employees, the fair value of the options was amortized on a graded basis through December 31, 2018, and starting on January 1, 2019, on a straight-line basis, over the requisite service period of the awards.

The weighted average grant date fair value per share of stock options granted under the Company's stock option plans during the years ended December 31, 2020, 2019 and 2018 was $37.53, $82.39 and $109.92, respectively.

The fair value of each option granted under the Company's equity plans has been calculated on the date of grant using the following weighted average assumptions:

	Year Ended December 31,		
	2020	2019	2018
Expected dividend yield	0%	0%	0%
Expected volatility	77.86%	71.34%	74.45%
Risk-free interest rate	0.97%	2.21%	2.68%
Expected term	5.98 years	6.05 years	6.04 years

Expected dividend yield: the Company has not paid, and does not anticipate paying, any dividends in the foreseeable future.

Risk-free interest rate: the Company determined the risk-free interest rate by using a weighted average equivalent to the expected term based on the U.S. Treasury yield curve in effect as of the date of grant.

Expected volatility: through December 31, 2015, the Company lacked sufficient Company-specific historical and implied volatility information, and as a result, the Company used the volatility of a group of publicly-traded peer companies in the Black-Scholes calculations. Beginning in 2016, the Company estimated its expected volatility using a weighted average of the historical volatility of publicly-traded peer companies and the volatility of its common stock and expected to continue to do so until such time as it has adequate historical data regarding the volatility of its common stock price for the duration of the expected term. Effective January 1, 2020, the Company began using the historical volatility of only its common stock, as there is adequate historical data for the duration of the expected term.

Expected term (in years): the expected term represents the period that the Company's stock option grants are expected to be outstanding. The expected term of the options granted to employees and non-employee directors by the Company has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. Through December 31, 2018, the expected term of the options granted to non-employee consultants was determined based on the contractual term of the options, and since January 1, 2019, the "simplified" method has been used. Under this approach, the weighted average expected life is presumed to be the average of the vesting term and the contractual term of the option.

Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from estimates. The Company estimates forfeitures based on historical terminations. For the years ended December 31, 2020, 2019 and 2018, the weighted-average forfeiture rates were 20.6%, 13.7% and 10.7%, respectively.

Through December 31, 2018, for options granted to non-employees, the expected term is 10 years, which is the contractual term of each option. All other assumptions used to calculate the grant date fair value for non-employees are generally consistent with the assumptions used for options granted to employees.

2014 Employee Stock Purchase Plan

On July 2, 2014, the Company's stockholders approved the 2014 Employee Stock Purchase Plan, which had been previously approved by the Board of Directors. The 2014 Employee Stock Purchase Plan became effective upon the completion of the IPO. A total of 282,000 shares of common stock were authorized for issuance under this plan. As of December 31, 2020, 177,879 shares have been issued under this plan and 104,121 shares are available for issuance under this plan. At December 31, 2020, accrued expenses includes $0.3 million of stock-based compensation expense related to an enrollment period for which the related shares had not been issued as of December 31, 2020.

10. Net Income (Loss) Per Share

Basic and diluted net income (loss) per share was calculated as follows for the years ended December 31, 2020, 2019 and 2018:

	Year Ended December 31,		
	2020	2019	2018
Basic net income (loss) per share:			
Numerator:			
Net income (loss) (in thousands)	$ 606,073	$ (680,238)	$ (372,882)
Denominator:			
Weighted average common stock outstanding —basic	51,983,188	50,833,837	46,121,194
Effect of dilutive securities:			
Stock options	721,791	—	—
Restricted stock units	292,241	—	—
ESPP	5,895	—	—
Total dilutive securities	1,019,927	—	—
Weighted average common stock outstanding —diluted	53,003,115	50,833,837	46,121,194
Net income (loss) per share—basic	$ 11.66	$ (13.38)	$ (8.08)
Net income (loss) per share—diluted	$ 11.43	$ (13.38)	$ (8.08)

The following common stock equivalents outstanding as of December 31, 2020, 2019 and 2018 were excluded from the calculation of diluted net loss per share for the periods presented because including them would have been anti-dilutive:

	Year Ended December 31,		
	2020	2019	2018
Stock options	4,781,737	7,677,518	6,758,420
Restricted stock units	—	—	13,500
Employee stock purchase plan	—	33,429	16,398
	4,781,737	7,710,947	6,788,318

Stock options and restricted stock units that are outstanding and contain performance-based vesting criteria for which the performance conditions have not been met are excluded from the calculation of common stock equivalents outstanding.

11. Income Taxes

Income (loss) before income tax expense consists of the following:

	Year Ended December 31,		
	2020	2019	2018
	(in thousands)		
Domestic	$ 639,986	$ (634,289)	$ (296,040)
Foreign	(33,913)	(45,949)	(76,842)
	$ 606,073	$ (680,238)	$ (372,882)

There is no current or deferred provision for income taxes because the Company had historically incurred operating losses prior to the year ended December 31, 2020, which it has used to reduce both federal and state taxable income for the year ended December 31, 2020. As of December 31, 2020, the Company continues to maintain a full valuation

allowance against its net deferred tax assets. The reported amount of income tax expense for the years differs from the amount that would result from applying domestic federal statutory tax rates to pretax losses primarily because of changes in valuation allowance.

A reconciliation of the U.S. statutory rate to the Company's effective tax rate is as follows:

	Year Ended December 31,		
	2020	2019	2018
Tax due at statutory rate	21.0%	21.0%	21.0%
State taxes, net of federal	5.7	2.8	6.0
Biogen transaction-related items	(10.1)	—	—
Stock-based compensation	0.9	1.4	2.5
Foreign rate differential	1.2	(1.6)	(4.3)
Federal and state credits	(1.5)	2.4	2.5
Change in valuation allowance	(17.6)	(25.8)	(27.6)
Other	0.4	0.5	(0.1)
Federal and state rate change	—	(0.7)	—
	0.0%	0.0%	0.0%

The Biogen transaction-related items consist primarily of the excess proceeds from the equity investment under the Biogen Stock Purchase Agreement.

Significant components of the Company's net deferred tax assets at December 31, 2020 and 2019 are as follows:

	December 31,	
	2020	2019
	(in thousands)	
Net operating losses	$ 222,607	$ 348,848
Capitalized start-up costs	873	982
Tax credit carryforwards	90,460	80,088
Accrued expenses	3,157	4,055
Depreciation and amortization	1,614	2,002
Stock options	56,520	46,750
Right of use asset	(5,981)	(8,059)
Lease liability	6,705	8,852
Other	148	(246)
Total net deferred tax asset before valuation allowance	376,103	483,272
Valuation allowance	(376,103)	(483,272)
Net deferred tax asset	$ —	$ —

As of December 31, 2020, the Company had federal and state net operating loss carryforwards of $41.7 million and $438.4 million, respectively, which begin to expire in 2033. As of December 31, 2020, the Company had additional federal net operating loss carryforwards of $886.1 million that do not expire. As of December 31, 2020, the Company had federal and state research and development tax credits carryforwards of $40.7 million and $9.4 million, respectively, which begin to expire in 2031. As of December 31, 2020, the Company had federal orphan drug tax credit carry forwards of $42.3 million, which begin to expire in 2034.

In response to the COVID-19 pandemic, the Coronavirus Aid, Relief and Economic Security Act ("the CARES Act") was signed into law in the U.S. in March 2020. The CARES Act adjusted a number of provisions of the tax code, including the calculation and eligibility of certain deductions and the treatment of net operating losses and tax credits. The

enactment of the CARES Act did not result in any material adjustment to the income tax provision for the year ended December 31, 2020, or to the net deferred tax assets as of December 31, 2020.

As of December 31, 2020, net deferred tax assets before the valuation allowance decreased $107.2 million, primarily due to the utilization of federal and state net operating loss carryforwards to reduce federal and state taxable income for the year ended December 31, 2020. This decrease in net deferred tax assets was offset by a corresponding decrease in the valuation allowance.

Management of the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which are comprised principally of federal and state net operating loss and tax credit carryforwards. Under the applicable accounting standards, management has considered the Company's history of losses and concluded that it is more likely than not that the Company will not recognize the benefits of its federal and state deferred tax assets. Accordingly, a full valuation allowance of $376.1 million and $483.3 million has been established at December 31, 2020 and 2019, respectively. The valuation allowance decreased by $107.2 million, increased by $174.9 million and increased by $102.9 million for the years ended December 31, 2020, 2019 and 2018, respectively, primarily due to utilization or generation of net operating losses.

Pursuant to Section 382 of the Internal Revenue Code, and similar state tax law, certain substantial changes in the Company's ownership may result in a limitation on the amount of net operating loss and tax credit carryforwards that may be used in future years. Utilization of the net operating loss and tax credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986 due to ownership change limitations that have occurred previously or that could occur in the future. These ownership changes may limit the amount of net operating loss and tax credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively. The Company completed a Section 382 study through December 31, 2020. Based on the study, the Company underwent two ownership changes for Section 382 purposes which occurred on March 11, 2014 and December 31, 2015. As a result of the ownership changes, the Company's net operating loss and tax credit carryforwards as of the ownership change dates are subject to limitation under Section 382; however, these limitations are not expected to cause any of the impacted net operating loss and tax credit carryforwards to expire unused. Any net operating losses or tax credits generated after the December 2015 change are not subject to this annual limitation. However, subsequent ownership changes, as defined by Section 382, may potentially further limit the amount of net operating loss and tax credit carryforwards that could be utilized to offset future taxable income and tax.

The Company applies the authoritative guidance on accounting for and disclosure of uncertainty in tax positions, which requires the Company to determine whether a tax position of the Company is more likely than not to be sustained upon examination, including resolution of any related appeals of litigation processes, based on the technical merits of the position. For tax positions meeting the more likely than not threshold, the tax amount recognized in the financial statements is reduced by the largest benefit that has a greater than fifty percent likelihood of being realized upon the ultimate settlement with the relevant taxing authority.

At December 31, 2020, 2019 and 2018, the Company had no unrecognized tax benefits.

The Company's policy is to record interest and penalties related to income taxes as part of the tax provision. As of December 31, 2020 and 2019, the Company had no accrued interest or penalties related to income taxes and no amounts have been recognized in the Company's statement of operations.

The Company files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by federal, state and foreign jurisdictions, where applicable. There are currently no pending tax examinations, and the Company's tax returns are generally open under statute from 2017 to the present. Tax attributes such as net operating losses and tax credits generated prior to 2017 and utilized in open years may still be adjusted upon examination.

12. Employee Benefit Plan

The Company maintains a 401(k) profit sharing plan (the "Plan") for its employees. Each employee may elect to contribute a portion of his or her compensation to the Plan, subject to annual limits established by the Internal Revenue Service. For the years ended December 31, 2020, 2019 and 2018, the Company matched 50% of eligible contributions to the Plan up to 6% of employee contributions. For the years ended December 31, 2020, 2019 and 2018 the Company contributed to the Plan $2.2 million, $3.6 million and $1.8 million, respectively.

13. Restructuring

In April 2020, the Company announced a restructuring plan to enable the Company to advance its corporate strategy and pipeline that included the elimination of approximately 53% of the Company's workforce. The workforce reduction primarily affected the ZULRESSO commercial operation and related selling, general and administrative support functions. During the year ended December 31, 2020, the Company recorded $27.7 million of expense for restructuring, primarily for one-time termination benefits to the affected employees, primarily for cash payments of severance, healthcare benefits and outplacement assistance. Substantially all of the accrued restructuring charges were paid in cash as of December 31, 2020.

Restructuring activity during the year ended December 31, 2020 was as follows:

	Restructuring accrual (in thousands)
Balance as of January 1, 2020	$ -
Restructuring expenses incurred	27,743
Cash paid	(25,102)
Non-cash activity	(2,438)
Balance as of December 31, 2020	$ 203

14. Selected Quarterly Financial Data (Unaudited)

The following table contains quarterly financial information for 2020 and 2019. The Company believes that the following information reflects all normal recurring adjustments necessary for a fair statement of the information for the periods presented. The operating results for any quarter are not necessarily indicative of results for any future period.

	2020				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter (1)	Total
	(in thousands, except per share amounts)				
Total revenue	$ 2,286	$ 1,089	$ 1,639	$ 1,109,186	$ 1,114,200
Total operating costs and expenses	133,910	140,056	108,797	135,211	517,974
Income (loss) from operations	(131,624)	(138,967)	(107,158)	973,975	596,226
Net income (loss)	(126,740)	(136,347)	(105,735)	974,895	606,073
Net income (loss) per share—basic	$ (2.44)	$ (2.63)	$ (2.03)	$ 18.71	$ 11.66
Net income (loss) per share—diluted	$ (2.44)	$ (2.63)	$ (2.03)	$ 18.19	$ 11.43

	2019				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
	(in thousands, except per share amounts)				
Total revenue	$ 465	$ 873	$ 3,570	$ 1,960	$ 6,868
Total operating costs and expenses	170,317	177,330	190,747	176,598	714,992
Loss from operations	(169,852)	(176,457)	(187,177)	(174,638)	(708,124)
Net loss	(163,406)	(168,221)	(179,958)	(168,653)	(680,238)
Net loss per share—basic and diluted	$ (3.37)	$ (3.28)	$ (3.48)	$ (3.25)	$ (13.38)

(1) In the fourth quarter of 2020, the Company recorded collaboration revenue of $1.1 billion related to the execution of the Biogen Collaboration Agreement and the Biogen Stock Purchase Agreement. For additional information, refer to Note 6, Collaboration Agreements.

Exhibit Index

Exhibit No.	Description
3.1	Fifth Amended and Restated Certificate of Incorporation of the Registrant, as currently in effect (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K (File No. 000-36544) filed on July 25, 2014)
3.2	Amended and Restated Bylaws of the Registrant, as amended on August 6, 2020 (incorporated by reference to Exhibit 3.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on August 10, 2020)
4.1	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
4.2	Description of Securities (incorporated by reference to Exhibit 4.2 of the Registrant's Annual Report on Form 10-K (File No. 001-36544) filed on February 27, 2020)
10.1+	2014 Stock Option and Incentive Plan and forms of award agreements thereunder (incorporated by reference to Exhibit 10.2 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.2**	Exclusive License Agreement by and between the Registrant and Washington University, dated November 11, 2013 (incorporated by reference to Exhibit 10.3 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.3**	Amended and Restated Commercial License by and between the Registrant and CyDex Pharmaceuticals, Inc., dated September 25, 2015 (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on November 6, 2015)
10.4**	Non-Exclusive License Agreement by and between the Registrant and the Regents of University of California, dated October 23, 2013, as amended May 14, 2014 (incorporated by reference to Exhibit 10.5 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.5	Lease Agreement, by and between the Registrant and ARE-MA Region No. 38, LLC, dated December 11, 2011, as amended by First Amendment to Lease, by and between ARE-MA Region No. 38, LLC, dated October 26, 2012, and Second Amendment to Lease, by and between ARE-MA Region No. 38, LLC, dated May 9, 2013 (incorporated by reference to Exhibit 10.6 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.6+	Offer letter by and between the Registrant and Jeffrey M. Jonas, dated July 18, 2013 (incorporated by reference to Exhibit 10.7 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.7+	Offer letter by and between the Registrant and Albert J. Robichaud, dated September 25, 2011 (incorporated by reference to Exhibit 10.8 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.8+	Offer letter by and between the Registrant and Stephen J. Kanes, dated May 21, 2013 (incorporated by reference to Exhibit 10.9 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.9+	Offer letter by and between the Registrant and Kimi Iguchi, dated February 7, 2013 (incorporated by reference to Exhibit 10.10 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.10+	Non-Solicitation, Confidentiality and Assignment Agreement by and between the Registrant and Jeffrey M. Jonas, dated August 19, 2013 (incorporated by reference to Exhibit 10.11 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.11+	Non-Solicitation, Confidentiality and Assignment Agreement by and between the Registrant and Albert J. Robichaud, dated November 7, 2011 (incorporated by reference to Exhibit 10.12 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.12+	Non-Solicitation, Confidentiality and Assignment Agreement by and between the Registrant and Stephen J. Kanes, dated July 17, 2013 (incorporated by reference to Exhibit 10.13 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)

Exhibit No.	Description
10.13+	Non-Solicitation, Confidentiality and Assignment Agreement by and between the Registrant and Kimi Iguchi, dated March 8, 2013 (incorporated by reference to Exhibit 10.14 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.14	Form of Indemnification Agreement to be entered into between the Registrant and its directors (incorporated by reference to Exhibit 10.16 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.15	Form of Indemnification Agreement to be entered into between the Registrant and its officers (incorporated by reference to Exhibit 10.17 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.16**	Supply Agreement by and between the Registrant and CyDex Pharmaceuticals, Inc., dated December 13, 2012, as amended August 21, 2013 and April 30, 2014 (incorporated by reference to Exhibit 10.18 of the Registrant's Registration Statement on Form S-1 (File No. 333-196849) filed on July 8, 2014)
10.17+	Severance and Change In Control Agreement between the Registrant and Jeffrey M. Jonas, dated September 25, 2014 (incorporated by reference to Exhibit 10.20 of the Registrant's Annual Report on Form 10-K (File No. 001-36544) filed on March 6, 2015)
10.18+	Severance and Change In Control Agreement between the Registrant and Kimi Iguchi, dated September 30, 2014 (incorporated by reference to Exhibit 10.21 of the Registrant's Annual Report on Form 10-K (File No. 001-36544) filed on March 6, 2015)
10.19+	Severance and Change In Control Agreement between the Registrant and Stephen J. Kanes, dated September 30, 2014 (incorporated by reference to Exhibit 10.22 of the Registrant's Annual Report on Form 10-K (File No. 001-36544) filed on March 6, 2015)
10.20+	Severance and Change In Control Agreement between the Registrant and Albert J. Robichaud, dated September 25, 2014 (incorporated by reference to Exhibit 10.23 of the Registrant's Annual Report on Form 10-K (File No. 001-36544) filed on March 6, 2015)
10.21**	Exclusive License Agreement by and between the Registrant and the Regents of the University of California, dated June 6, 2015 (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q/A (File No. 001-36544) filed on October 31, 2015)
10.22	Third Amendment to Lease, by and between Registrant and ARE-MA Region No. 38, LLC, dated September 9, 2015 (incorporated by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on November 6, 2015)
10.23	Fourth Amendment to Lease, by and between the Registrant and ARE-MA Region No. 38, LLC, dated October 27, 2015 (incorporated by reference to Exhibit 10.4 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on November 6, 2015)
10.24	Amendment No. 3 to Supply Agreement, by and between the Registrant and CyDex Pharmaceuticals, Inc., dated September 25, 2015 (incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on November 6, 2015)
10.25	Fifth Amendment to Lease, by and between the Registrant and ARE-MA Region No. 38, LLC, dated December 9, 2015 (incorporated by reference to Exhibit 10.29 of the Registrant's Annual Report on Form 10-K (File No. 001-36544) filed on February 29, 2016)
10.26	Lease Agreement, by and between the Registrant and Jamestown Premier 245 First, LLC, dated May 24, 2016 (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on August 9, 2016)
10.27+	2016 Annual Bonus Incentive Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K (File No. 001-36544) filed on May 3, 2016)

Exhibit No.	Description
10.28	Sixth Amendment to Lease by and between ARE-MA Region No. 38, LLC and the Registrant, dated May 8, 2017 (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on August 3, 2017)
10.29+	2014 Employee Stock Purchase Plan, dated June 7, 2017 (incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on August 3, 2017)
10.30+	Offer Letter by and between the Registrant and Michael Cloonan, dated March 21, 2017 (incorporated by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on August 3, 2017)
10.31+	Severance and Change In Control Agreement between the Registrant and Michael Cloonan, dated March 21, 2017 (incorporated by reference to Exhibit 10.4 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on August 3, 2017)
10.32	First Amendment to Lease by and between CLPF-Cambridge Science Center LLC and the Registrant dated April 4, 2018 (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on May 5, 2018)
10.33+	Amended and Restated 2016 Inducement Equity Plan and forms of agreements thereunder, as amended and restated on September 20, 2018 (incorporated by reference to Exhibit 10.1 of the Registration's Quarterly Report on Form 10-Q (File No. 001-36544) filed on November 6, 2018)
10.34+	Amended and Restated Non-Employee Director Compensation Policy, dated September 20, 2018 (incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on November 6, 2018)
10.35	Seventh Amendment to Lease by and between ARE-MA Region No. 38, LLC and the Registrant, dated October 23, 2018 (incorporated by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on November 6, 2018)
10.36	Eighth Amendment to Lease by and between ARE-MA Region No. 38, LLC and the Registrant, dated March 29, 2019 (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on August 6, 2019)
10.37+	Form of Performance-Based Restricted Stock Unit Award Agreement Under the Sage Therapeutics, Inc. 2014 Stock Option and Incentive Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q (File No. 001-36544) filed on August 10, 2020)
10.38†*	Biogen Collaboration and License Agreement by and among the Registrant, Biogen MA Inc. and Biogen International GmbH, dated November 27, 2020
10.39†*	Stock Purchase Agreement by and between the Registrant and Biogen MA Inc., dated November 27, 2020
10.40+*	Offer Letter by and between the Registrant and Barry Greene, dated December 15, 2020
10.41+*	Severance and Change In Control Agreement between the Registrant and Barry Greene, dated December 15, 2020
10.42+*	Letter Agreement between the Registrant and Jeffrey Jonas, dated December 15, 2020
21.1*	Subsidiaries of the Registrant
23.1*	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm
24.1*	Power of Attorney (see signature page of this Annual Report on Form 10-K)
31.1*	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1***	Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Exhibit No.	Description
101.INS*	Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101.*)

(+) Management contract or compensatory plan or arrangement.

(*) Filed herewith.

(**) Confidential treatment has been granted by the Securities and Exchange Commission as to certain portions.

(***) The certifications furnished in Exhibit 32.1 hereto are deemed to accompany this Annual Report on Form 10-K and will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended. Such certifications will not be deemed to be incorporated by reference into any filings under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that the Registrant specifically incorporates it by reference.

(†) Portions of this exhibit have been omitted pursuant to Item 601(b)(10)(iv) of Regulation S-K.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

SAGE THERAPEUTICS, INC.

Date: February 24, 2021

By: /s/ Barry E. Greene

Barry E. Greene
Chief Executive Officer, President and Director
(Principal Executive Officer)

We, the undersigned directors and officers of Sage Therapeutics, Inc., hereby severally constitute and appoint Barry E. Greene and Kimi Iguchi, and each of them singly, our true and lawful attorneys-in-fact, with full power to them, and to each of them singly, to sign for us and in our names in the capacities indicated below, any and all amendments to this Annual Report on Form 10-K, and to file or cause to be filed the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as each of us might or could do in person, and hereby ratifying and confirming all that said attorneys-in-fact, and each of them, or their substitute or substitutes, shall do or cause to be done by virtue of this power of attorney.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons in the capacities indicated below and on the dates indicated.

Signature	Title	Date
/s/ Barry E. Greene Barry E. Greene	Chief Executive Officer, President and Director (Principal Executive Officer)	February 24, 2021
/s/ Kimi Iguchi Kimi Iguchi	Chief Financial Officer (Principal Financial and Accounting Officer)	February 24, 2021
/s/ Jeffrey M. Jonas Jeffrey M. Jonas, M.D.	Director	February 24, 2021
/s/ Michael F. Cola Michael F. Cola	Director	February 24, 2021
/s/ Steven Paul Steven Paul, M.D.	Director	February 24, 2021
/s/ Kevin P. Starr Kevin P. Starr	Director	February 24, 2021
/s/ James Frates James Frates	Director	February 24, 2021
/s/ Geno Germano Geno Germano	Director	February 24, 2021
/s/ Elizabeth Barrett Elizabeth Barrett	Director	February 24, 2021
/s/ George Golumbeski George Golumbeski, Ph.D.	Director	February 24, 2021

Exhibit 10.38

Certain identified information has been excluded from the exhibit because it is both (i) not material and (ii) would likely cause competitive harm to the Company, if publicly disclosed. Double asterisks denote omissions.

COLLABORATION AND LICENSE AGREEMENT

BETWEEN

SAGE THERAPEUTICS, INC.,

BIOGEN MA INC.

AND

BIOGEN INTERNATIONAL GMBH

Dated November 27, 2020

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COLLABORATION AND LICENSE AGREEMENT

This COLLABORATION AND LICENSE AGREEMENT (this "**Agreement**"), dated as of November 27, 2020 (the "**Execution Date**"), is entered into by and between Sage Therapeutics, Inc., a Delaware corporation having its principal place of business at 215 First Street, Cambridge, Massachusetts 02142, U.S.A., ("**Sage**"), and Biogen MA Inc., a corporation organized under the laws of the Commonwealth of Massachusetts having an office at 225 Binney Street, Cambridge, MA 02142 ("**BIMA**"), and Biogen International GmbH, a Gesellschaft mit beschränkter Haftung organized under the laws of Switzerland, whose registered office is at Neuhofstrasse 30, 6340 Baar, Switzerland ("**BIG**", together with BIMA, collectively, "**Biogen**"). Sage and Biogen are referred to in this Agreement individually as a "**Party**" and collectively as the "**Parties**."

RECITALS:

WHEREAS, Sage is a commercial-stage biopharmaceutical company committed to discovering, developing and commercializing novel medicines to treat central nervous system (CNS) disorders;

WHEREAS, Biogen is a global pharmaceutical company engaged in the research, development and commercialization of products useful in the treatment and prevention of human diseases and conditions; and

WHEREAS, Sage and Biogen desire to collaborate to Develop, Manufacture, perform Medical Affairs Activities with respect to and Commercialize the Licensed 217 Products and the Licensed 324 Products in the Profit-Share Territory (all as defined below), and Biogen desires to obtain, and Sage desires to grant to Biogen, an exclusive license in the Biogen Territory and a co-exclusive license in the Profit-Share Territory, in each case, to Develop, Manufacture, perform Medical Affairs Activities with respect to and Commercialize the Licensed 217 Products and the Licensed 324 Products, all in accordance with the terms and conditions set forth herein; and

WHEREAS, Biogen desires to have an exclusive option under certain circumstances to be granted an exclusive license in the Biogen Territory and a co-exclusive license in the Profit-Share Territory, in each case, to Develop, Manufacture, perform Medical Affairs Activities with respect to and Commercialize the Licensed [**] Products, all in accordance with the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants herein contained, the Parties hereby agree as follows:

1. DEFINITIONS

1.1 Definitions.

Unless specifically set forth to the contrary herein, the following terms, whether used in the singular or plural, will have the respective meanings set forth below:

1.1.1 "**[**] Competing Product**" shall have the same definition as the Licensed Product that it replaces as set forth in Section 3.10.2 (Further Development of Licensed [**] Products), if the replacement mechanism of such Section 3.10.2 (Further Development of Licensed [**] Products) is implemented.

1.1.2 "**[**] Substitution**" has the meaning set forth in Section 3.10.2 (Further Development of Licensed [**] Products).

1.1.3 "**217 Competing Product**" means any product (other than a Licensed 217 Product and, in the case of Sage, ZULRESSO® (brexanolone) in PPD), the Principal Mode of Action of which is positive allosteric modulation of the GABAA Receptor intended for the treatment of MDD, PPD, TRD, GAD or BPD. Notwithstanding any provision to the contrary set forth in this Agreement, a 217 Competing Product will include any product (other than a Licensed 217 Product and, in the case of Sage, ZULRESSO® (brexanolone) in PPD) intended for the treatment of MDD, PPD, TRD, GAD or BPD, the Principal Mode of Action of which is positive allosteric modulation of the GABAA Receptor alone or combined with any other therapeutic agent.

1.1.4 "**217 Regulatory/Commercial Milestone Event**" has the meaning set forth in Section 9.6.1 (Licensed 217 Products Regulatory/Commercial Milestones).

1.1.5 "**217 Regulatory/Commercial Milestone Payment**" has the meaning set forth in Section 9.6.1 (Licensed 217 Products Regulatory/Commercial Milestones).

1.1.6 "**217 Sales Milestone Event**" has the meaning set forth in Section 9.7.1.1 (Licensed 217 Products Sales Milestones).

1.1.7 "**217 Sales Milestone Payment**" has the meaning set forth in Section 9.7.1.1 (Licensed 217 Products Sales Milestones).

1.1.8 "**324 Competing Product**" means any product (other than a Licensed 324 Product), the Principal Mode of Action of which is positive allosteric modulation of the GABAA Receptor intended for the treatment of ET, Epilepsy or any symptomatic treatment of Parkinson's Disease. Notwithstanding any provision to the contrary set forth in this Agreement a 324 Competing Product will include any product (other than a Licensed 324 Product) intended for the treatment of ET, Epilepsy or any symptomatic treatment of Parkinson's Disease, the Principal Mode of Action of which is positive allosteric modulation of the GABAA Receptor alone or combined with any other therapeutic agent.

1.1.9 "**324 Regulatory/Commercial Milestone Event**" has the meaning set forth in Section 9.6.2 (Licensed 324 Products Regulatory/Commercial Milestones).

1.1.10 "**324 Regulatory/Commercial Milestone Payment**" has the meaning set forth in Section 9.6.2 (Licensed 324 Products Regulatory/Commercial Milestones).

1.1.11 "**324 Sales Milestone Event**" has the meaning set forth in Section 9.7.2.1 (Licensed 324 Products Sales Milestones).

1.1.12 "**324 Sales Milestone Payment**" has the meaning set forth in Section 9.7.2.1 (Licensed 324 Products Sales Milestones).

1.1.13 "**Abbreviated New Drug Application**" or "**ANDA**" has the meaning set forth in the FD&C Act (21 U.S.C. § 355(b)(2), 21 U.S.C. § 355(j) and 21 C.F.R. § 314.3), as amended.

1.1.14 "**Acquired Business**" has the meaning set forth in Section 11.7.2 (Acquired Business Exception).

1.1.15 "**Acquirer**" means, collectively, with respect to a Change of Control of a Party, the Third Party referenced in the definition of Change of Control and such Third Party's Affiliates, as determined immediately prior to the closing of such Change of Control.

1.1.16 "**Additional Development Proposal**" has the meaning set forth in Section 3.3.2 (Additional Indications Development).

1.1.17 "**Additional Indications Development**" has the meaning set forth in Section 3.3.2 (Additional Indications Development)

1.1.18 "**Affiliate**" means, with respect to a Person, any other Person that (directly or indirectly) controls, is controlled by, or is under common control with, such Person, whether now or in the future. For purposes of this Agreement, a Person will be deemed to control another Person if it owns or controls, directly or indirectly, fifty percent (50%) or more of the equity securities of such other Person entitled to vote in the election of directors (or, in the case that such other Person is not a corporation, for the election of the corresponding managing authority), or otherwise has the power to direct, or cause the direction of, the management and policies of such other Person, whether through ownership of voting securities, by contract, or otherwise. The Parties acknowledge that in the case of certain entities organized under the Laws of certain countries outside the United States, the maximum percentage ownership permitted by Law for a foreign investor may be less than fifty percent (50%), and that in such case such lower percentage will be substituted in the preceding sentence; *provided* that such foreign investor has the power to direct the management and policies of such entity. For clarity, a Person may be or become an Affiliate of another Person and may cease to be an Affiliate of such Person, in each case, during the Term of this Agreement.

1.1.19 "**Agreement**" has the meaning set forth in the preamble.

1.1.20 "**Alliance Manager**" has the meaning set forth in Section 2.1 (Alliance Manager)

1.1.21 "**Allowable Overruns**" means, on a plan-by-plan basis, any amount incurred by a Party in the performance of the activities taken as a whole under a Joint Development Plan, Joint Medical Affairs Plan or Joint Commercialization Plan or with respect to CMC Activities under a Manufacturing Plan, in each case, that is (a) above the applicable amounts budgeted for the performance of such activities taken as a whole under the corresponding Joint Development Budget, Joint Medical Affairs Budget, Joint Commercialization Budget or Manufacturing Budget, as applicable, in each case, by [**] percent ([**]%) or less for such Calendar Year, *provided* that such amounts were not attributable to a breach of this Agreement by the performing Party; or (b) otherwise approved by the JSC.

1.1.22 "**Antitrust Law**" means any federal, state or foreign law, regulation or decree, including the HSR Act, designed to prohibit, restrict or regulate actions for the purpose or effect of monopolization or restraint of trade.

1.1.23 "**Audited Party**" has the meaning set forth in Section 9.11.3.1 (Record Retention; Audits).

1.1.24 "**Auditing Party**" has the meaning set forth in Section 9.11.3.1 (Record Retention; Audits).

1.1.25 "**Auditor**" has the meaning set forth in Section 9.11.3.1 (Record Retention; Audits).

1.1.26 "**Bankruptcy Code**" has the meaning set forth in Section 14.5.1 (Termination for Insolvency).

1.1.27 "**Biogen**" has the meaning set forth in the preamble.

1.1.28 "**Biogen Background Know-How**" means any and all Know-How (a) Controlled by Biogen or any of its Affiliates (solely or jointly with any Third Party) as of the Execution Date, or (b) that during the Term arises and is Controlled by Biogen or its Affiliates, or otherwise comes into the Control of, Biogen or its Affiliates, in each case ((a) and (b)), independently from the performance of activities under this Agreement and that is used and incorporated into the Development, Manufacture or Commercialization of any Licensed Product by or on behalf of Biogen or its Affiliates in the performance of activities under any Joint Development Plan, Joint Commercialization Plan, Joint Medical Affairs Plan or Manufacturing Plan.

1.1.29 "**Biogen Background Patents**" means any and all Patents (a) Controlled by Biogen or any of its Affiliates (solely or jointly with any Third Party) as of the Execution Date, or (b) that during the Term arise and are Controlled by Biogen or its Affiliates, or otherwise come into the Control of, Biogen or its Affiliates, in each case ((a) and (b)), independently from the performance of activities under this Agreement and that claim any Biogen Background Know-How.

1.1.30 "**Biogen Background Technology**" means the Biogen Background Know-How and Biogen Background Patents.

1.1.31 "**Biogen Collaboration Know-How**" has the meaning set forth in Section 13.2.1 (Ownership).

1.1.32 "**Biogen Collaboration Patents**" means all Collaboration Patents that claim any Biogen Collaboration Know-How, but expressly excluding all Biogen Background Patents and Biogen's interest in the Joint Collaboration Patents.

1.1.33 "**Biogen Collaboration Technology**" means the Biogen Collaboration Know-How and the Biogen Collaboration Patents.

1.1.34 "**Biogen Indemnitees**" has the meaning set forth in Section 12.2 (General Indemnification by Sage).

1.1.35 "**Biogen Licensed Technology**" means the Biogen Background Technology and Biogen Collaboration Technology.

1.1.36 "**Biogen Prosecuted Patents**" has the meaning set forth in Section 13.2.1 (General).

1.1.37 "**Biogen Publications**" has the meaning set forth in Section 10.2.1 (Publication).

1.1.38 "**Biogen Territory**" means (a) with respect to all Licensed 217 Products: (i) unless and until Sage exercises an Opt-Out Right in accordance with Section 9.5 (Sage Opt-Out) for such Licensed 217 Products, all countries of the world other than the Profit-Share Territory and the Existing Partner Territory, and (ii) if Sage has exercised an Opt-Out Right in accordance with Section 9.5 (Sage Opt-Out) for such Licensed 217 Products, then from and after the Opt-Out Date, all countries of the world other than the Existing Partner Territory, and (b) with respect to all Licensed 324 Products: (i) unless and until Sage exercises an Opt-Out Right in accordance with Section 9.5 (Sage Opt-Out) for such Licensed 324 Products, all countries of the world other than the Profit-Share Territory, and (ii) if Sage has exercised an Opt-Out Right in accordance with Section 9.5 (Sage Opt-Out) for such Licensed 324 Products then from and after the Opt-Out Date, all countries of the world.

1.1.39 "**Biogen Territory Royalties**" has the meaning set forth in Section 9.8.1 (Biogen Territory Royalties).

1.1.40 "**Blocking New Technology**" has the meaning set forth in Section 8.3.2.2 (Inclusion Process).

1.1.41 "**BPD**" means bipolar depression.

1.1.42 "**Branding Strategy**" has the meaning set forth in Section 5.11.1 (Branding).

1.1.43 "**Business Day**" means a day other than a Saturday, Sunday or a bank or other public holiday in Massachusetts, United States.

1.1.44 "**Calendar Quarter**" means the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 and December 31 of each Calendar Year.

1.1.45 "**Calendar Year**" means each successive period of twelve (12) months commencing on January 1 and ending on December 31.

1.1.46 "**Change of Control**" means, with respect to a Party, (a) a merger or consolidation of such Party with a Third Party that results in the voting securities of such Party outstanding immediately prior thereto, or any securities into which such voting securities have been converted or exchanged, ceasing to represent more than fifty percent (50%) of the combined voting power of the surviving entity or the parent of the surviving entity immediately after such merger or consolidation, (b) a transaction or series of related transactions in which a Third Party, together with its Affiliates, becomes the direct or indirect beneficial owner of more than fifty percent (50%) of the combined voting power of the outstanding securities of such Party, or (c) the sale or other transfer to a Third Party of all or substantially all of such Party's and its controlled Affiliates' assets in the aggregate. Notwithstanding the foregoing, any transaction or series of transactions effected for the bona fide primary purpose of financing the operations of the applicable Party or changing the form or jurisdiction of organization of such Party will not be deemed a "Change of Control" for purposes of this Agreement.

1.1.47 "**Clinical Data**" means the original source patient data and case report forms (CRFs) collected or generated by, on behalf of, or under the authority of a Party with respect to Clinical Studies conducted for any Licensed Product, together with all analysis, reports and results with respect thereto.

1.1.48 "**Clinical Study**" means, with respect to any product, a Phase 1 Study, Phase 2 Study, Phase 3 Study, Phase 4 Study or other voluntary or required study (including a non-interventional study) in humans to obtain information regarding such product, including information relating to the safety, tolerability, pharmacological activity, pharmacokinetics, dose ranging or efficacy of such product.

1.1.49 "**CMC**" means, chemistry, manufacturing and controls with respect to a product, which includes (a) manufacturing and process development records for such product and (b) all chemistry, manufacturing and control procedures necessary or reasonably useful for the manufacture of such product.

1.1.50 "**CMC Activities**" means those formulation development, process development and other CMC-related activities, including sourcing and testing of all raw materials and components used in the manufacture of a product, and activities designed to support preparation of the Chemistry, Manufacturing and Controls sections of any Regulatory Materials or Regulatory Approval.

1.1.51 "**Collaboration Know-How**" has the meaning set forth in Section 13.2.1 (Ownership).

1.1.52 "**Collaboration Patents**" means all Patents with a priority date after the Effective Date that claim any Collaboration Know-How.

1.1.53 "**Collaboration Technology**" means the Collaboration Know-How and Collaboration Patents.

1.1.54 "**Combination Product**" means any Licensed Product containing (a) a Sage Molecule and (b) one or more Other Components sold for a fixed price.

1.1.55 "**Commercialization**" **or** "**Commercialize**" means, with respect to any product, any and all activities directed to marketing, advertising, promoting, distributing, importing, exporting, using, offering to sell, and selling or otherwise commercializing such product, including: pre-launch activities to prepare a market for potential sales, modeling and pharmaco-economic studies, epidemiological studies; government affairs, and public policy activities; patient services, patient advocacy engagement; and activities related to pricing and reimbursement, including seeking and maintaining any required Pricing and Reimbursement Approvals; but excluding, in each case, any activities directed to Manufacturing, Development or Medical Affairs Activities. "**Commercialize**" and "**Commercialized**" will be construed accordingly.

1.1.56 "**Commercialization Lead Party**" for a given Commercialization activity has the meaning set forth in Section 5.2.1.1 (General).

1.1.57 "**Commercialization Wind-Down Period**" has the meaning set forth in Section 14.6.5 (Sell-Off and Appointment as Distributor).

1.1.58 "**Commercially Reasonable Efforts**" means with respect to the efforts to be expended by a Party or its Affiliate with respect to any objective related to the Development, Manufacture, performance of Medical Affairs Activities with respect to or Commercialization of a product, [**].

1.1.59 "**Committee**" means the Joint Steering Committee, the Joint Development Committee, the Joint Commercialization Committee or any committees formed by the Joint Steering Committee pursuant to Section 2.2.2.25 (Specific Responsibilities of the JSC) as applicable.

1.1.60 "**Competing Product**" means the 217 Competing Products and the 324 Competing Products, in each case, individually or collectively as the context requires.

1.1.61 "**Competitive Infringement**" means, on a Licensed Product-by-Licensed Product basis, where the making, using, selling, offering for sale, or importing, by any Third Party (other than any Sublicensee or authorized purchaser or other authorized transferee of a Party with respect to such Licensed Product), Acquirer or Acquired Business, in each case, of any pharmaceutical product in the Territory is Covered by any Sage Licensed Patent or any Collaboration Patent, including the filing of an Abbreviated New Drug Application with any applicable Regulatory Authority with respect to a Licensed Product as the reference product by any such Third Party.

1.1.62 "**Confidential Information**" means (a) the terms of this Agreement and (b) any and all Know-How and other confidential or proprietary information, whether communicated in writing or orally or by any other method, that is or has been provided by or on behalf of one Party or any of its Affiliates to the other Party or any of its Affiliates in connection with the performance of activities under

this Agreement, whether prior to, on or after the Execution Date, including information pertaining to the terms of this Agreement.

1.1.63 "**Control**" or "**Controlled**" means the possession (whether by ownership, license, sublicense or otherwise, other than by a license, sublicense or other right granted pursuant to this Agreement) by a Party or its Affiliates (a) with respect to any Materials or other tangible Know-How, of the legal authority or right to physical possession of such Materials or tangible Know-How, with the right to provide such Materials or tangible Know-How to the other Party on the terms set forth herein, (b) with respect to Patents, Regulatory Approvals, Regulatory Materials, intangible Know-How or other intellectual property or subject matter, of the legal authority or right to grant a license, sublicense, access or right to use or right to reference (as applicable) to the other Party under such Patents, Regulatory Approvals, Regulatory Materials, intangible Know-How or other intellectual property or subject matter on the terms set forth herein, or (c) with respect to a product or component thereof, the legal authority or right to grant a license, sublicense, access or right to use (as applicable) to the other Party under Patents that Cover or Know-How that is incorporated in or embodies, such product or component on the terms set forth herein, in each case ((a), (b) and (c)), (i) without breaching or otherwise violating the terms or conditions of any agreement or other arrangement with any Third Party in existence as of the time such Party or its Affiliates would first be required hereunder to grant such license, sublicense, rights of access or right of use to or (ii) with respect to Materials, Know-How or Patents developed, acquired or licensed by a Party after the Execution Date, without incurring any additional payment obligations to a Third Party that are not subject to an allocation agreed between the Parties pursuant to this Agreement or otherwise in writing.

Notwithstanding any provision in this Agreement to the contrary, if there is a Change of Control of a Party during the Term, such Party will be deemed not to Control any Patents, Regulatory Approvals, Regulatory Materials, Know-How or other intellectual property rights, subject matter or product or component thereof that are owned or in-licensed immediately prior to such Change of Control by such Acquirer of such acquired Party, except if (A) such Patents, Regulatory Approvals, Regulatory Materials, Know-How or other intellectual property rights, subject matter or product or component thereof owned or in-licensed by the Acquirer were generated from participation by employees or consultants of such Acquirer in furtherance of Development, Manufacturing, Medical Affairs Activities or Commercialization activities with respect to Licensed Products under this Agreement after such Change of Control, (B) any Patents, Regulatory Approvals, Regulatory Materials, Know-How or other intellectual property, subject matter or product or component thereof owned or in-licensed by such Third Party were not used in the performance of Development, Manufacturing, Medical Affairs Activities or Commercialization activities with respect to Licensed Products under this Agreement prior to the consummation of such Change of Control, but after the consummation of such Change of Control, such acquired Party or any of its Affiliates uses any such Patents, Regulatory Approvals, Regulatory Materials, Know-How or other intellectual property or proprietary subject matter in the performance of Development, Manufacturing, Medical Affairs Activities or Commercialization activities with respect to Licensed Products under this Agreement, or (C) prior to the consummation of such Change of Control, such acquired Party or any of its Affiliates also Controlled such Patents, Regulatory Approvals, Regulatory Submissions, Know-How or other intellectual property rights, subject matter or product or component thereof owned or in-licensed by such Acquirer, in each of which cases ((A)–(C)), such Patents, Regulatory Approvals, Regulatory Materials, Know-How or other intellectual property rights, subject matter or product or component thereof owned or in-licensed by such Acquirer will be deemed Controlled by the acquired Party for purposes of this Agreement.

1.1.64 "**Cover**," "**Covering**" or "**Covered**" means that, with respect to any Patent and product (including a Licensed Product) in the Territory, but for a license granted to any Person under any claim included in such Patent, the manufacture, use, sale, offer for sale or importation of such product (including a Licensed Product) in the Field in the applicable Territory by such Person would infringe such claim, or in the case of a claim that has not yet issued, would infringe such claim if it were to issue.

1.1.65 "**Defending Party**" has the meaning set forth in Section 13.5.4 (Cooperation Regarding Enforcement, Defense or Post-Grant Proceedings).

1.1.66 "**Detail**" or "**Detailing**" means, with respect to a Licensed Product in the Profit-Share Territory, the communication by a Sales Representative to a health care provider during a sales call in accordance with the approved Joint Commercialization Plan (a) involving face-to-face contact or contact by means of an e-detail or video, (b) describing in a manner consistent with applicable Law and industry standards and the quality of similar presentations made by a Party's Sales Representatives for such Party's other products (if applicable) the FDA-approved indicated uses and other relevant characteristics of such Licensed Product, (c) using the Promotional Materials in an effort to increase the prescribing or hospital ordering preferences of such Licensed Product for its FDA-approved indicated uses and (d) made at such health care provider's office, in a hospital, at another appropriate alternate care setting, or in any other venue approved by the JCC. A Detail does not include a Sample drop made by a Sales Representative. For the avoidance of doubt, discussions at conventions or other scientific meetings will not constitute "**Details**" or "**Detailing**."

1.1.67 "**Detail Cost**" means with respect to a Detail provided by either Party in the Profit-Share Territory, the cost-per-Detail as set forth in the Joint Commercialization Budget.

1.1.68 "**Develop**" and "**Development**" means, with respect to any product, any and all activities that relate to obtaining, maintaining or expanding Regulatory Approval of such product, including any and all activities related to the design, research, discovery, generation, identification, profiling, characterization, pre-clinical development, or Nonclinical Studies of such product, CMC Activities, clinical drug development activities conducted before or after obtaining Regulatory Approval for such product that are reasonably related to or leading to the development, preparation, or submission of data and information to a Regulatory Authority for the purpose of obtaining, supporting, expanding or maintaining Regulatory Approval of such product, together with all activities related to pharmacokinetic profiling, design and conduct of Clinical Studies [**] of such product, pharmacovigilance activities, adverse event reporting, and regulatory affairs, statistical analysis, report writing and the creation and submission of Regulatory Materials related to the foregoing (including the services of outside advisors and consultants in connection therewith); but excluding, in each case, any activities directed to Medical Affairs Activities, Commercialization or Manufacturing.

1.1.69 "**Development Expense Report**" has the meaning set forth in Section 9.3.1 (Joint Development Costs Reconciliation).

1.1.70 "**Development Lead Party**" for a given Development activity has the meaning set forth in Section 3.2.1 (General).

1.1.71 "**Disclosing Party**" has the meaning set forth in Section 10.1.1 (Nondisclosure and Non-Use Obligations).

1.1.72 "**Disputes**" has the meaning set forth in Section 15.3.1 (Disputes).

1.1.73 "**Distribution Costs**" means the FTE Costs and Out-of-Pocket Costs, incurred by a Party or its Affiliate or for such Party's or its Affiliate's account during the Term and pursuant to the Agreement that are directly or reasonably allocable to the distribution of a Licensed Product in the Profit-Share Territory, including: [**].

1.1.74 "**Distribution Matters**" means all issues and decisions regarding the distribution of the Licensed Products in the Profit-Share Territory, including decisions as to whether and with which

wholesalers, specialty pharmacies and distributors to contract, and the terms of contracts with such wholesalers and distributors.

1.1.75 "**Distribution Plan**" has the meaning set forth in Section 5.7.3 (Distribution in the Profit-Share Territory).

1.1.76 "**DOJ**" means the U.S. Department of Justice.

1.1.77 "**Dollars**" or "**$**" means the legal tender of the United States of America.

1.1.78 "**Effective Date**" means the date on which all of the HSR Conditions (as defined in the SPA) have been met, unless either Party terminates this Agreement or the SPA at any time prior to the Closing Date (as defined in the SPA) in accordance with the terms hereof or thereof, in which case the Effective Date will be deemed not to have occurred.

1.1.79 "**EMA**" means the European Medicines Agency.

1.1.80 "**EP Background Patent**" has the meaning set forth in Section 8.3.1.3(a) (Third Party Payments owed to Existing Partner).

1.1.81 "**EP CMC Patent**" has the meaning set forth in Section 8.3.1.3(a) (Third Party Payments owed to Existing Partner).

1.1.82 "**EP-Enhanced 217 Product**" has the meaning set forth in Section 8.3.1.3(a) (Third Party payments owed to Existing Partner).

1.1.83 "**Execution Date**" has the meaning set forth in the preamble.

1.1.84 "**ET**" means the Indication that is Essential Tremor.

1.1.85 "**Executive Officer**" means, for Sage, its Chief Executive Officer or another senior executive designee with decision-making authority, responsibilities and seniority comparable thereto, and for Biogen, its Chief Executive Officer or another senior executive designee with decision-making authority, responsibilities and seniority comparable thereto. In the event that the position of any of the Executive Officers identified in this Section 1.1.85 (Executive Officer) no longer exists due to a Change of Control, corporate reorganization, corporate restructuring or the like, then the applicable Executive Officer will be replaced with another executive officer with responsibilities and seniority comparable to the eliminated Executive Officer.

1.1.86 "**Existing Partner**" means Shionogi & Co., Ltd and any successor in interest thereto.

1.1.87 "**Existing Partner Agreement**" means that certain Collaboration and License Agreement between Sage and the Existing Partner, dated as of June 12, 2018, as may be amended or restated from time to time.

1.1.88 "**Existing Partner Territory**" means Japan, the Republic of Korea (South Korea) and Taiwan.

1.1.89 "**Existing Sage Agreement**" has the meaning set forth in Section 1.1.110 (In-License Agreement).

1.1.90 "**Exploit**" means to make, have made, use, import, export, offer to sell, sell, Develop, Manufacture, perform Medical Affairs Activities, Commercialize or otherwise exploit. "**Exploitation**" will be construed accordingly.

1.1.91 "**FD&C Act**" means the United States Federal Food, Drug and Cosmetic Act, as amended.

1.1.92 "**FDA**" means the United States Food and Drug Administration or any successor agency thereto.

1.1.93 "**Field**" means any and all uses in humans.

1.1.94 "**Finance Expert**" has the meaning set forth in Section 2.7.3.6 (Final Decision-Making Authority).

1.1.95 "**Finance Officers**" has the meaning set forth in Section 9.3.1 (Development Costs Reconciliation).

1.1.96 "**Finance Working Group**" has the meaning set forth in Section 9.4 (Finance Working Group).

1.1.97 "**First Commercial Sale**" means, on a Licensed Product-by-Licensed Product and country-by-country basis, the first commercial sale in such country of such Licensed Product by Biogen or any of its Related Parties to a Third Party for end use consumption in such country following receipt of Regulatory Approval and, if applicable, Pricing and Reimbursement Approval, in each case, for such Licensed Product in such country. First Commercial Sale excludes transfers of a Licensed Product to Third Parties as *bona fide* Samples, as donations, for Clinical Study purposes or for any expanded access program, compassionate sales or use program (including named patient program or single patient program), indigent program, or for other charitable or promotional purposes or similar limited purposes.

1.1.98 "**Force Majeure**" has the meaning set forth in Section 15.12 (Force Majeure).

1.1.99 "**FTE**" means a full time person, or in the case of less than a full time person, a full time equivalent person year, carried out by an appropriately qualified employee of a Party or its Affiliates, based on [**] person hours per year. Overtime, and work on weekends, holidays, and the like will not be counted with any multiplier (*e.g.*, time and a half or double time) toward the number of hours that are used to calculate the FTE contribution. Each employee utilized by a Party in connection with its performance under this Agreement may be less than or greater than one FTE based on the hours actually worked by such employee and will be treated as an FTE on a *pro rata* basis based upon the actual number of such hours worked divided by [**].

1.1.100 "**FTE Costs**" means, for any period, the FTE Rate multiplied by the number of FTEs in such period. FTEs will be pro-rated on a daily basis if necessary.

1.1.101 "**FTE Rate**" means (a) for scientific, research and development, regulatory or other technical personnel, [**] Dollars ($[**]) per one (1) full scientific, clinical, medical, regulatory or technical FTE per a full Calendar Year, which rate includes all direct and indirect costs of a Party's FTE, including personnel and travel expenses, and (b) for all distribution, sales and marketing, field-facing medical personnel and medical science liaisons, and other non-scientific, non-clinical, non-research or development, non-regulatory and non-technical personnel, the rates to be determined by the Finance Working Group and approved by the JSC and set forth in the applicable initial Joint Commercialization

Plan and Joint Commercialization Budget or the Joint Medical Affairs Plan and Joint Medical Affairs Budget. Starting [**], (i) the foregoing rate in clause (a) will adjust on [**] of each Calendar Year by an amount equal to the change, if any, in the Consumer Price Index for All Urban Consumers (CPI U) for the U.S. City Average, calculated by the Bureau of Labor Statistics during the immediately preceding Calendar Year, and (ii) the rates in clause (b) will be adjusted by [**] of each Calendar Year for the next Calendar Year (concurrently with the JCC's preparation of annual amendments to each then-current Joint Commercialization Plan and the corresponding Joint Commercialization Budget) based on the reassessments and recommendations of the Finance Working Group and as approved by the JSC. Notwithstanding the foregoing, for any Calendar Year during the Term that is less than a full year, the referenced rate in clause (a) and the rates determined by the Finance Working Group and approved by the JSC under clause (b) will be proportionately reduced to reflect such portion of FTEs for such full Calendar Year.

1.1.102 "**GAAP**" means generally accepted accounting principles as practiced in the United States, as consistently applied.

1.1.103 "**GABAA Receptor**" means the ionotropic receptor for the inhibitory neurotransmitter gamma-aminobutyric acid (GABA).

1.1.104 "**GAD**" means Generalized Anxiety Disorder.

1.1.105 "**Generic Competition**" in a country means (a) a Generic Product with respect to a Licensed Product is being marketed and sold by a Third Party (without a license, authorization or other grant of rights by Biogen or Sage) in such country in the Biogen Territory in a Calendar Quarter and (b) [**].

1.1.106 "**Generic Product**" means (a) (i) a Third Party product containing the same active ingredient as that contained in a Licensed Product (whether approved under an ANDA, or other applicable abbreviated or expedited approval process), and (ii) [**], or (b) [**].

1.1.107 "**Governmental Authority**" means any applicable government authority, court, tribunal, arbitrator, agency, department, legislative body, commission or other instrumentality of (a) any government of any country or territory, (b) any nation, state, province, county, city or other political subdivision thereof or (c) any multinational or supranational body.

1.1.108 "**Guaranteed Obligations**" has the meaning set forth in Section 15.14 (Performance by BIMA and BIG).

1.1.109 "**HSR Act**" means the Hart Scott Rodino Antitrust Improvements Act of 1976, as amended, and the rules promulgated thereunder.

1.1.110 "**In-License Agreement**" means any agreement between a Party and a Third Party pursuant to which such Party obtains rights to any Third Party intellectual property rights (including Know-How and Patents) or materials that are necessary or reasonably useful for the Development, Manufacture, performance of Medical Affairs with respect to or Commercialization of any Licensed Product pursuant to this Agreement. In-License Agreements existing as of the Execution Date with respect to Sage are those certain agreements between Sage and a Third Party listed on Schedule 1.1.110 (Existing Sage Agreements and Provisions) (each, an "**Existing Sage Agreement**").

1.1.111 "**Incremental Taxes**" has the meaning set forth in Section 9.11.5.3 (Tax Actions).

1.1.112 "**IND**" means any Investigational New Drug Application, as defined in 21 C.F.R. § 312, or any corresponding application in any country or jurisdiction other than the United States.

1.1.113 "**Indemnified Party**" has the meaning set forth in Section 12.3 (Indemnification Procedure).

1.1.114 "**Indemnified Persons**" means the Sage Indemnitees or the Biogen Indemnitees, as applicable.

1.1.115 "**Indemnifying Party**" has the meaning set forth in Section 12.3 (Indemnification Procedure).

1.1.116 "**Indication**" means any separate and distinct human disease, syndrome, disorder, illness or condition intended to be treated by any therapeutic product, excluding different lines of treatment or patient populations (*e.g.*, pediatric) for the same disease, disorder, illness or condition.

1.1.117 "**Initiation**" means, with respect to a Clinical Study of a product, [**] pursuant to the applicable protocol for such Clinical Study.

1.1.118 "**Inventory Build Costs**" means the Manufacturing Costs incurred in connection with the production or acquisition of supplies of a Licensed Product prior to First Commercial Sale of such Licensed Product, to the extent that such costs and expenses are not incurred in connection with the performance of a Clinical Study and would ordinarily be included as a cost of Development under GAAP.

1.1.119 "**IP Committee**" means the intellectual property committee as more fully described in Section 13.4.1 (IP Committee).

1.1.120 "**IP Counsels**" has the meaning set forth in Section 8.3.2.4 (New Technology Disputes).

1.1.121 "**IP Expert**" has the meaning set forth in Section 8.3.2.4 (New Technology Disputes).

1.1.122 "**IP Head**" means (a) with respect to Biogen, the representative designated by Biogen via the IP Committee and (b) with respect to Sage, the representative designated by Sage via the IP Committee, in each case, as confirmed by the Parties to the JSC.

1.1.123 "**JCC Communication Plan**" has the meaning set forth in Section 2.4.3 (Meetings).

1.1.124 "**JDC Communication Plan**" has the meaning set forth in Section 2.3.3 (Meetings).

1.1.125 "**JMC Communication Plan**" has the meaning set forth in Section 2.6.3 (Meetings).

1.1.126 "**Joint Collaboration Know-How**" has the meaning set forth in Section 13.2.1 (Ownership).

1.1.127 "**Joint Collaboration Patents**" means all Collaboration Patents that claim any Joint Collaboration Know-How.

1.1.128 "**Joint Collaboration Technology**" means the Joint Collaboration Know-How and Joint Collaboration Patents.

1.1.129 "**Joint Commercialization Budget**" has the meaning set forth in Section 5.2.1 (General).

1.1.130 "**Joint Commercialization Committee**" or "**JCC**" has the meaning set forth in Section 2.4.1 (Formation; Composition; Dissolution).

1.1.131 "**Joint Commercialization Costs**" means:

(a) the FTE Costs and Out-of-Pocket Costs that are directly or reasonably allocable to the performance of Commercialization activities by or on behalf of a Party or any of its Affiliates for the Licensed Products in the Profit-Share Territory in accordance with the applicable Joint Commercialization Plan and the amounts budgeted for the performance of such activities in the applicable Joint Commercialization Budget, whether prior to or after receipt of Regulatory Approvals, including [**], in all cases, *plus* applicable Allowable Overruns;

(b) [**];

(c) [**] to be treated as Joint Commercialization Costs pursuant to Section [**]) and in accordance with the applicable Joint Commercialization Plan and Joint Commercialization Budget [**];

(d) [**] to be treated as Joint Commercialization Costs pursuant to Section [**];

(e) [**] to be treated as Joint Commercialization Costs pursuant to Section [**];

(f) [**] to be treated as Joint Commercialization Costs pursuant to Section [**];

(g) [**] to be treated as Joint Commercialization Costs pursuant to Section [**]; and

(h) [**] to be treated as Joint Commercialization Costs pursuant to Section [**].

Joint Commercialization Costs specifically exclude any FTE Costs, Out-of-Pocket Costs and other costs and expenses: [**].

If any cost or expense is directly or reasonably allocable to more than one Commercialization cost category set forth above, then such cost or expense will only be counted once (*i.e.*, as a Joint Commercialization Cost with respect to only one such category). No cost or expense included as a Joint Commercialization Cost will (A) also be included as a Joint Development Cost or a Joint Medical Affairs Cost, (B) be (or have been) included in the calculation of Net Sales as a deduction from the total amount billed or invoiced on sales of the applicable Licensed Product in the Profit-Share Territory, or (C) be an amount for which one Party or the other is solely responsible under this Agreement. Joint Commercialization Costs will be recognized and calculated in accordance with GAAP.

1.1.132 "**Joint Commercialization Plan**" has the meaning set forth in Section 5.2.1 (General).

1.1.133 "**Joint Development Budget**" has the meaning set forth in Section 3.2.1 (General).

1.1.134 "**Joint Development Committee**" or "**JDC**" has the meaning set forth in Section 2.3.1 (Formation; Composition; Dissolution).

1.1.135 "**Joint Development Costs**" means:

(a) the FTE Costs and Out-of-Pocket Costs that are directly or reasonably allocable to the performance of Development activities by or on behalf of a Party or any of its Affiliates for the Licensed Products for the Profit-Share Territory and incurred by or on behalf of a Party or any of its Affiliates in accordance with the applicable Joint Development Plan and the amounts budgeted for the performance of such activities in the applicable Joint Development Budget *plus* applicable Allowable Overruns, including: [**];

(b) [**] to be treated as Joint Development Costs pursuant to Section [**];

(c) [**] treated as Joint Development Costs pursuant to Section [**] and in accordance with the applicable Joint Development Plan and Joint Development Budget, including [**];

(d) [**] to be treated as Joint Development Costs pursuant to Section [**];

(e) [**] to be treated as Joint Development Costs pursuant to Section [**]; and

(f) [**] to be treated as Joint Development Costs pursuant to Section [**].

Joint Development Costs specifically exclude any FTE Costs, Out-of-Pocket Costs and other costs and expenses [**].

If any cost or expense is directly or reasonably allocable to more than one Joint Development Cost category above, then such cost or expense will only be counted once (*i.e.*, as a Joint Development Cost with respect to only one such category). No cost or expense included as a Joint Development Cost will: (1) also be included as a Joint Commercialization Cost or a Joint Medical Affairs Cost; or (2) be an amount for which one Party or the other is solely responsible under this Agreement. Joint Development Costs will be recognized and calculated in accordance with GAAP.

1.1.136 "**Joint Development Plan**" has the meaning set forth in Section 3.2.1 (General).

1.1.137 "**Joint Manufacturing Committee**" or "**JMC**" has the meaning set forth in Section 2.6.1 (Joint Manufacturing Committee; Formation; Composition; Dissolution).

1.1.138 "**Joint Medical Affairs Budget**" has the meaning set forth in Section 4.2 (Joint Medical Affairs Plans).

1.1.139 "**Joint Medical Affairs Costs**" means the FTE Costs and Out-of-Pocket Costs that are directly or reasonably allocable to the performance of Medical Affairs activities by or on behalf of a

Party or any of its Affiliates for the Licensed Products in the Profit-Share Territory and incurred by or on behalf of a Party or any of its Affiliates in accordance with the applicable Joint Medical Affairs Plan and the amounts budgeted for the performance of such activities in the applicable Joint Medical Affairs Budget plus applicable Allowable Overruns.

Joint Medical Affairs Costs specifically exclude any FTE Costs, Out-of-Pocket Costs and other costs and expenses [**].

If any cost or expense is directly or reasonably allocable to more than one Joint Medical Affairs Cost category above, then such cost or expense will only be counted once (i.e., as a Joint Medical Affairs Cost with respect to only one such category). No cost or expense included as a Joint Medical Affairs Cost will: (i) also be included as a Joint Development Cost or a Joint Commercialization Cost; or (ii) be an amount for which one Party or the other is solely responsible under this Agreement. Joint Medical Affairs Costs will be recognized and calculated in accordance with GAAP.

1.1.140 "**Joint Medical Affairs Plan**" has the meaning set forth in Section 4.2 (Joint Medical Affairs Plans).

1.1.141 "**Joint Medical Affairs Subcommittee Communication Plan**" has the meaning set forth in Section 2.5.3 (Joint Medical Affairs Subcommittee; Meetings).

1.1.142 "**Joint Program Activities**" means any activities with respect to a Licensed Product conducted by either Party or any of its Affiliates, Sublicensees or Subcontractors during the Term consisting of (a) Development for the purpose of, or in support of, (i) obtaining, maintaining or expanding Regulatory Approval in the Profit-Share Territory of such Licensed Product, or (ii) Commercializing such Licensed Product in the Profit-Share Territory, in each case ((i) and (ii)), in accordance with the corresponding Joint Development Plan for such Licensed Product, (b) Commercialization of such Licensed Product in the Profit-Share Territory in accordance with the corresponding Joint Commercialization Plan for such Licensed Product, (c) Medical Affairs Activities with respect to such Licensed Product in the Profit-Share Territory in accordance with the corresponding Joint Medical Affairs Plan for such Licensed Product or (d) the Manufacture of such Licensed Product for use in any of the activities set forth under clause (a), (b) or (c).

1.1.143 "**Joint Program Damages**" means any Losses incurred in connection with any Third Party Claim, as well as any reasonable attorneys' fees and costs of litigation incurred by either Party (or any of its Indemnified Persons) from Third Party Claims that arise from or are related to the performance of Joint Program Activities, *other than* Losses arising out of (a) any breach of, or inaccuracy in, any representation or warranty made by a Party in this Agreement, or any breach or violation of any covenant or agreement of a Party in this Agreement, or (b) the gross negligence, willful misconduct by or of a Party or any of its respective Affiliates or Sublicensees or any of their respective directors, officers, employees or agents in the performance of such Party's obligations or exercise of its rights under this Agreement.

1.1.144 "**Joint Publications**" has the meaning set forth in Section 10.2.1 (Publication).

1.1.145 "**Joint Publications Working Group**" has the meaning set forth in Section 10.2.1 (Publication).

1.1.146 "**Joint Steering Committee**" or "**JSC**" has the meaning set forth in Section 2.2.1 (Formation; Composition; Dissolution).

1.1.147 "**JRA Exception**" has the meaning set forth in Section 13.1.2 (JRA Exception).

1.1.148 "**KINETIC Study**" means the double-blind, placebo-controlled Phase 2 Study to evaluate the safety and efficacy of the Licensed 324 Product compared to placebo on upper limb tremor reduction in individuals with Essential Tremor (ET) entitled "A Study to Evaluate the Efficacy, Safety, and Tolerability of SAGE-324 in Participants With Essential Tremor" and identified as NCT04305275 and SAGE324-ETD-201, ongoing as of the Execution Date.

1.1.149 "**Know-How**" means any proprietary data, results and information of any type whatsoever, in any tangible or intangible form, including know-how, trade secrets, knowledge, practices, techniques, methods, processes, inventions, developments, specifications, formulations, formulae, instructions, skills, materials or compositions of matter of any type or kind (patentable or otherwise), experiences, ideas, technical assistance, designs, drawings, assembly procedures, computer programs, software, algorithms, specifications, marketing reports, study designs, protocols, Materials, clinical and non-clinical study reports, clinical and non-clinical information or data, regulatory submission documents and summaries, expertise, stability, technology, test data including pharmacological, biological, chemical, biochemical, toxicological, and clinical test data, analytical and quality control data, stability data and other data, studies and procedures.

1.1.150 "**Launch Window**" means, for a Licensed Product in the Profit-Share Territory, the time period beginning [**] before the anticipated date of the First Commercial Sale for such Licensed Product in the Profit-Share Territory (as determined by the JCC and for which Sage has received written notice) and ending on [**].

1.1.151 "**Laws**" means all applicable laws, statutes, rules, regulations, orders, judgments, injunctions, ordinances or other pronouncements having the binding effect of law of any Governmental Authority, including if either Party is or becomes subject to a legal obligation to a Regulatory Authority or other Governmental Authority (such as a corporate integrity agreement or settlement agreement with a Governmental Authority).

1.1.152 "**Lead Publishing Party**" for a given publication has the meaning set forth in Section 10.2.1 (Publication).

1.1.153 "**Licensed [**] Product Substitution Date**" has the meaning set forth in Section 3.10.3 (Effects of [**] Substitution).

1.1.154 "**Licensed [**] Products**" means (a) the product containing SAGE-[**], for which data from Nonclinical Studies exists as of the Execution Date, in any dosage strength, and (b) any and all other products containing SAGE-[**], in any dosage strength, formulation or method of delivery, whether as the sole active ingredient or in combination with one or more Other Components.

1.1.155 "**Licensed 217 Products**" means (a) the product containing SAGE-217 or "zuranolone" (as its International Nonproprietary Name (INN) and United States Adopted Name (USAN)), which is the subject of Clinical Studies as of the Execution Date, in any dosage strength, and (b) any and all other products containing SAGE-217, in any dosage strength, formulation or method of delivery, whether as the sole active ingredient or in combination with one or more Other Components.

1.1.156 "**Licensed 324 Products**" means (a) the product containing SAGE-324, which is the subject of Clinical Studies as of the Execution Date, in any dosage strength, and (b) any and all other products containing SAGE-324, in any dosage strength, formulation or method of delivery, whether as the sole active ingredient or in combination with one or more Other Components.

1.1.157 "**Licensed Products**" means the Licensed 217 Products and the Licensed 324 Products, in each case, individually or collectively as the context requires.

1.1.158 "**Long Term Joint Commercialization Budget**" has the meaning set forth in Section 5.2.1.1 (General).

1.1.159 "**Long Term Joint Development Budget**" has the meaning set forth in Section 3.2.1 (General).

1.1.160 "**Long Term Joint Medical Affairs Budget**" has the meaning set forth in Section 4.2.1 (General).

1.1.161 "**Losses**" has the meaning set forth in Section 12.1 (General Indemnification by Biogen).

1.1.162 "**LP U.S. TM Strategy**" has the meaning set forth in Section 5.11.4.1 (Profit-Share Territory).

1.1.163 "**LP U.S. Trademark**" means those Trademarks to be used in connection with the Commercialization of each Licensed Product in the Profit-Share Territory, as selected jointly by the Parties through the JCC pursuant to Section 5.11.4.1 (Profit-Share Territory).

1.1.164 "**Major Commercialization Activity**" means any of the following matters with respect to a Licensed Product in the Profit-Share Territory: [**].

1.1.165 "**Major Development Activity**" means the Development activities set forth on Schedule 1.1.165 (Major Development Activities).

1.1.166 "**Major European Countries**" means [**].

1.1.167 "**Major Medical Affairs Activity**" means the Medical Affairs activities set forth on Schedule 1.1.167 (Major Medical Affairs Activities).

1.1.168 "**Manufacturing**" or "**Manufacture**" means, with respect to any product (including active pharmaceutical ingredient and other material contained therein), any and all activities related to the manufacture of such product, including qualification, validation and scale-up, pre-clinical, clinical and commercial manufacture, packaging, labeling, filling, finishing, assembly, processing, in-process and finished product testing, release of such product or any component or ingredient thereof, quality assurance, quality control and audit activities related to manufacturing, testing and release of such product, ongoing stability tests, storage, shipping, supply or storage of such product (or any components or process steps involving such product or any companion diagnostic), placebo or comparator agent, as the case may be, product characterization, technical support activities, and regulatory activities related to any of the foregoing, but excluding any activities directed to Development, Medical Affairs Activities or Commercialization of such product.

1.1.169 "**Manufacturing Budget**" has the meaning set forth in Section 7.2 (Manufacturing Plans).

1.1.170 "**Manufacturing Costs**" means the consolidated fully burdened manufacturing cost incurred by a Party or its Affiliate for a Sage Molecule or Licensed Product and in accordance with

GAAP (consistently applied by such Party and its Affiliates with respect to all small molecule compounds and products), which will be the sum of:

for Manufacturing activities with respect to a Sage Molecule or Licensed Product performed by or on behalf of a Party or its Affiliates, [**]%) of the actual costs of materials consumed or incorporated into, and direct labor and other actual costs incurred in the performance of such Manufacturing activities specifically related or reasonably allocable to the relevant Sage Molecule or Licensed Product, as applicable, including: ordinary course quality assurance costs, stability testing cost, characterization testing, quality control, release testing of drug substance and drug product, reasonably allocable equipment maintenance costs, customs and duty and charges levied by governmental authorities, labelling and packaging, failed lot charges, excess and obsolete inventory write-off, and manufacturing scrap incurred in the ordinary course of production (and not attributable to the gross negligence of such Party or its Affiliates), reasonably allocable cost of freight into or between Manufacturing sites, technology transfer costs related to new processes or facilities, any actual amounts paid by a Party or its Affiliate to a contract manufacturing organization Subcontractor that are solely and specifically related to the Manufacture of such Licensed Product (or Sage Molecules included therein or any components of the foregoing), including capacity reservation or cancellation fees paid to a Third Party, and costs to manage arrangements with contract manufacturing organizations that are specifically related or reasonably allocable the Manufacture of a Sage Molecule or Licensed Product (including to qualify or audit Manufacturing sites of such contract manufacturing organizations utilized in the Manufacture of a Sage Molecule or Licensed Product), *plus* a reasonable allocation of the Manufacturing site's fixed and direct overhead consistent with the applicable Party's costing methodology, including leasing costs and depreciation for capital expenditures for equipment (but not other capital expenses) and facilities costs, in each case, to the extent specifically related or reasonably allocable to the relevant Sage Molecule or Licensed Product (or components of the foregoing), which will be calculated in accordance with GAAP; *provided* that any such allocation of overhead will be made on the basis of normal capacity operation of the relevant facility and in any event will exclude (a) except as otherwise set forth in this definition, any costs and charges related to excess, idle or unused manufacturing capacity and (b) allocation of general corporate overhead; *provided, further* that such allocation of overhead may take into account idle capacity at a Party or its Affiliate's own Manufacturing sites that was originally reserved under the Manufacturing Plan in good faith and not more than [**] in advance for Manufacture of the relevant Sage Molecule or Licensed Product and such idle capacity if not otherwise able to be filled by such Party or its applicable Affiliates despite reasonable efforts to do so.

1.1.171 "**Manufacturing Lead Party**" for a given Manufacturing activity means the Party with day-to-day operational responsibility with respect to the Manufacture of the applicable Licensed Products as set forth under the applicable Manufacturing Plan.

1.1.172 "**Manufacturing Plan**" has the meaning set forth in Section 7.2 (Manufacturing Plans).

1.1.173 "**Manufacturing Technology Transfe**r" has the meaning set forth in Section 7.8.1 (Manufacturing Technology Transfer).

1.1.174 "**Material Adverse Product Effect**" means (a) [**], or (b) [**].

1.1.175 "**Material Communications**" means written, telephonic or in person communications from or with any Regulatory Authority concerning any of the following: product quality attributes (*e.g.*, purity, toxicity, drug/drug interactions); significant or new safety findings (*e.g.*, Serious Adverse Events, emerging safety signals); clinical or non-clinical findings affecting patient safety; lack of efficacy; potential pathways to Regulatory Approval; receipt or denial of Regulatory Approval; the design

of Clinical Studies, or the need for additional Clinical Studies or Nonclinical Studies (*e.g.*, additional toxicology or carcinogenicity studies).

1.1.176 "**Material Commercialization Subcontractor**" has the meaning set forth in Section 5.14 (Commercialization Subcontract).

1.1.177 "**Material Development Subcontractor**" has the meaning set forth in Section 3.9 (Development Subcontract).

1.1.178 "**Materials**" means all tangible compositions of matter, devices, articles of manufacture, assays, biological, chemical or physical materials and other similar materials.

1.1.179 "**MDD**" means the Indication that is Major Depressive Disorder.

1.1.180 "**Medical Affairs Activities**" means, with respect to a Licensed Product, any and all activities performed by or on behalf of a Party's or its Affiliates' medical affairs departments interacting with physicians or other healthcare professionals who may utilize or conduct research related to a drug or biological product, including: supporting continuing medical education and other medical programs and communications; development, publication, and dissemination of publications; development and fulfillment of medical information responses; development and execution of disease awareness education including symposia and digital education initiatives; sponsorship and booth exhibition at key congresses; conducting health economic, burden of illness/disease, natural history and real world evidence studies;; supporting educational fellowships and research grants, supporting external research efforts such as scientific research agreements and investigator initiated trials (following Regulatory Approval); medical resourcing, training and allocation; medical and scientific platform and content development; conducting appropriate activities involving opinion leaders, including communications and engagement; conducting medical science liaison activities; advisory boards or other consulting programs (to the extent related to medical affairs or clinical guidance) ; establishing patient registries and expanded access programs; post-approval investigator initiated trials or scientific research agreements; life cycle management activities and clinical research (including Phase 4 Optional Studies and investigator initiated research (IIR)).

1.1.181 "**Medical Affairs Lead Party**" for a given Medical Affairs Activity has the meaning set forth in Section 4.2 (Joint Medical Affairs Plans).

1.1.182 "**NDA**" means any New Drug Application as described in 21 C.F.R. § 314, or any corresponding application for Regulatory Approval in any country or jurisdiction other than the United States.

1.1.183 "**Net Revenues**" means, to the extent allocable to a Licensed Product in the Profit-Share Territory, and, if applicable, for one or more such Licensed Products: (a) the total Net Sales of all such Licensed Products in the Profit-Share Territory; *plus* (b) Other Income received in connection with such Licensed Products in the Profit-Share Territory. Net Revenues will be accounted for in accordance with GAAP, as consistently applied by such Party in the Profit-Share Territory.

1.1.184 "**Net Sales**" means with respect to a Licensed Product, the gross amount invoiced in a country by or on behalf of [**], (each of the foregoing Persons, a "**Selling Party**") for the sale or other disposition of such Licensed Product in such country to Third Parties [**] in *bona fide* arms' length transactions in the Territory, less the following deductions:

[**].

Such amounts will be determined consistent with a Selling Party's customary practices and in accordance with GAAP. It is understood that any accruals for individual items reflected in Net Sales are periodically (at least [**]) trued up and adjusted by each Selling Party consistent with its customary practices and in accordance with GAAP.

Notwithstanding anything to the contrary set forth in this Agreement, [**].

In the case of any Combination Product sold in a given country and reporting period, Net Sales for the purpose of determining royalties and Sales Milestone Events of the Combination Product in such country will be calculated by multiplying actual Net Sales of such Combination Product by the fraction A/(A+B), where A is the invoice price of the applicable Sage Molecule if sold separately in the same indication in such country, and B is the total invoice price of the Other Components in the Combination Product, if sold separately in the same indication in such country.

If, on a country-by-country basis in a particular reporting period, the Licensed Product is sold separately in the same indication in a country, but the Other Components in the Combination Product are not sold separately in the same indication in such country, then Net Sales for the purpose of determining royalties and Sales Milestone Events of the Combination Product for such country will be calculated by multiplying actual Net Sales of the Combination Product by the fraction A/C, where A is the invoice price of the Sage Molecule if sold separately in the same indication in such country, and C is the invoice price of the Combination Product in such country.

If, on a country-by-country basis in a particular reporting period, the Licensed Product in the Combination Product is not sold separately in the same indication in such country, but the Other Components included in the Licensed Product are sold separately in the same indication in such country, then Net Sales for the purpose of determining royalties and Sales Milestone Events of the Combination Product for such country will be calculated by multiplying actual Net Sales of the Combination Product by the fraction (C-B)/C, where B is the invoice price of the Other Components included in such Combination Product if sold separately in the same indication in such country, and C is the invoice price of the Combination Product in such country.

If neither the Licensed Product nor the Other Components are sold separately in the same indication in a given country during a particular reporting period, then Net Sales will be calculated based on [**].

Any disputes between the Parties relating to the calculation of Net Sales under this Section 1.1.184 (Net Sales) based on non-cash consideration or allocation of Net Sales for a Combination Product will be resolved pursuant to the dispute resolution procedures in Section 15.3.5 (Expert Arbitration).

1.1.185 "**New License Agreement**" has the meaning set forth in Section 14.6.8 (Sublicense Survival).

1.1.186 "**New Technology**" has the meaning set forth in Section 8.3.2.1 (New Technology).

1.1.187 "**New Technology Terms**" has the meaning set forth in Section 8.3.2.2 (Inclusion Process).

1.1.188 "**Non-Defending Party**" has the meaning set forth in Section 13.5.4 (Cooperation Regarding Enforcement, Defense or Post-Grant Proceedings).

1.1.189 "**Non-Major Commercialization Activities**" means the day-to-day, operational Commercialization activities performed for a Licensed Product in the Profit-Share Territory under a Joint Commercialization Plan, including any Commercialization matter within a Joint Commercialization Plan that is not a Major Commercialization Activity.

1.1.190 "**Non-Major Development Activities**" means the day-to-day, operational Development activities performed for a Licensed Product in the Profit-Share Territory under a Joint Development Plan.

1.1.191 "**Non-Major Medical Affairs Activities**" means the day-to-day, operational Medical Affairs Activities performed for a Licensed Product in the Profit-Share Territory under a Joint Medical Affairs Plan.

1.1.192 "**Non-Major Regulatory Activities**" means the day-to-day, operational regulatory matters within the scope of a Party's responsibility under Section 6.1 (Regulatory Lead Responsibilities).

1.1.193 "**Non-Proposing Party**" has the meaning set forth in Section 3.3.2 (Additional Indications Development).

1.1.194 "**Nonclinical Studies**" means all non-human animal studies for any Licensed Product, including preclinical studies, non-clinical and toxicology studies.

1.1.195 "**Ongoing 217 Studies**" means the Clinical Studies and Nonclinical Studies for the Licensed 217 Product ongoing, paused or planned as of the Execution Date, as identified on Schedule 1.1.195 (Ongoing 217 Studies).

1.1.196 "**OP&L Share**" means the Parties' equal sharing of the Operating Profits or the Operating Losses for the Licensed Products pursuant to Section 9.3.3 (Profit Sharing Following First Commercial Sale).

1.1.197 "**Operating Profit (or Loss)**" means, for a given period of time, Net Revenue of a Licensed Product for the Profit-Share Territory during such period, less the sum of: (a) Joint Development Costs for such Licensed Product *plus* (b) Joint Medical Affairs Costs for such Licensed Product *plus* (c) Joint Commercialization Costs for such Licensed Product, in each case ((a), (b) and (c)) incurred during such time period. For clarity, Operating Profit (or Loss) will be determined prior to application of any income taxes, and if such terms are used individually, "Operating Profit" will mean a positive Operating Profit (or Loss), and "Operating Loss" will mean a negative Operating Profit (or Loss). Operating Profit (or Loss) will be recognized and calculated in accordance with GAAP.

1.1.198 "**Opt-Out Date**" has the meaning set forth in Section 9.5.1 (Exercise of Opt-Out).

1.1.199 "**Opt-Out Products**" has the meaning set forth in Section 9.5.1 (Exercise of Opt-Out).

1.1.200 "**Opt-Out Right**" has the meaning set forth in Section 9.5.1 (Exercise of Opt-Out).

1.1.201 "**Opt-Out Wind-Down Activities**" has the meaning set forth in Section 9.5.2 (Effect of Opt-Out).

1.1.202 "**Opt-Out Wind-Down Costs**" has the meaning set forth in Section 9.5.2 (Effect of Opt-Out).

1.1.203 "**Opt-Out Wind-Down Period**" has the meaning set forth in Section 9.5.2 (Effect of Opt-Out).

1.1.204 "**Other Component**" means one or more additional therapeutic agents (other than any Sage Molecule) [**].

1.1.205 "**Other Income**" means with respect to a Product Class (a) any payment received by a Party or its Affiliate from a Sublicensee prior to Sage's exercise of its Opt-Out Right with respect to the Product Class of such Licensed Product in consideration for the grant of rights (including an option to obtain rights) to Develop, Manufacture, perform Medical Affairs Activities for or Commercialize a Licensed Product in the Profit-Share Territory, and (b) to the extent not already described in clause (a), other payments when recognized as income or an offset to an expense in accordance with GAAP by a Party or its Affiliate that is attributable to such Licensed Product described in the foregoing clause (a) in the Profit-Share Territory; *provided*, *however*, that Other Income will not include any such payments received by such Party or its Affiliate from a Sublicensee [**].

1.1.206 "**Out-of-Pocket Costs**" means, with respect to certain activities for a Licensed Product hereunder, specifically identifiable expenses paid or payable by either Party or its Affiliates to Third Parties in consideration for the conduct of such activities, including payments to contract personnel (including contractors, consultants and Subcontractors).

1.1.207 "**Panel**" has the meaning set forth in Section 15.3.5.1 (Expert Arbitration).

1.1.208 "**Parties**" has the meaning set forth in the preamble.

1.1.209 "**Party**" has the meaning set forth in the preamble.

1.1.210 "**Patents**" means all (a) patents, (b) patent applications, including all provisional and non-provisional applications, patent cooperation treaty (PCT) applications, substitutions, divisions and renewals, continuations, continuations-in-part, any patent issued with respect to any such patent applications, (c) all patents-of-addition, reissues, reexaminations, renewals, extensions or restorations by existing or future extension or restoration mechanisms (including any supplementary protection certificate or equivalents thereof), (d) inventor's certificates or letters patent, and (e) and all other counterparts and substantially equivalent form of government issued right substantially similar to any of the foregoing described in clauses (a) through (d) above, in any country or jurisdiction.

1.1.211 "**Patent Costs**" means the Out-of-Pocket Costs paid to outside legal counsel or other Third Parties, and filing and maintenance expenses, incurred in Prosecuting and Maintaining Patents and enforcing and defending them, but excluding any Third Party Payments described in Section 8.3 (Third Party In-Licenses Payments).

1.1.212 "**Paying Party**" has the meaning set forth in Section 9.11.1 (Manner of Payment).

1.1.213 "**Payments**" has the meaning set forth in Section 9.11.5.1 (General).

1.1.214 "**Person**" means any natural person, corporation, unincorporated organization, partnership, association, sole proprietorship, joint stock company, joint venture, limited liability company, trust or government, or Governmental Authority, or any other similar entity.

1.1.215 "**Pharmacovigilance Agreement**" has the meaning set forth in Section 6.10 (Reporting Adverse Events).

1.1.216 "**Phase 1 Study**" means a clinical study of an investigational product in human subjects with the primary objective of characterizing its safety, metabolism, tolerability, pharmacokinetics and clinical pharmacology and identifying a recommended dose and regimen for future studies and that satisfies the requirements of 21 C.F.R. § 312.21(a), as amended (or its successor regulation), or, with respect to any other country or region, the equivalent of such a clinical trial in such other country or region.

1.1.217 "**Phase 2 Study**" means a clinical study of an investigational product in human subjects with the objective of exploring the feasibility, safety, dose ranging, or efficacy of a pharmaceutical or biologic product that satisfies the requirements of 21 C.F.R. § 312.21(b), as amended (or its successor regulation), or, with respect to any other country or region, the equivalent of such a clinical trial in such other country or region. Notwithstanding the foregoing, solely for purposes of Section 9.6.1 (Licensed 217 Products Regulatory/Commercial Milestones) and Section 9.6.2 (Licensed 324 Products Regulatory/Commercial Milestones), the Phase 2 Study must be prospectively designed to generate sufficient data (if successful) to commence a Phase 3 Study for such product.

1.1.218 "**Phase 3 Study**" means a clinical study of an investigational product in human subjects that the FDA permits to be conducted under an open IND and that is performed to gain evidence with statistical significance of the efficacy of such product in a target population, and to obtain expanded evidence of safety for such product that is needed to evaluate the overall benefit-risk relationship of such product, to form the basis for approval of an NDA by a Regulatory Authority and to provide an adequate basis for physician labeling, in a manner that meets the requirements of 21 C.F.R. § 312.21(c), as amended (or its successor regulation), or, with respect to any other country, the equivalent of such a clinical study in such other country. Notwithstanding any provision to the contrary set forth in this Agreement, treatment of patients as part of an expanded access program, compassionate sales or use program (including named patient program or single patient program), or an indigent program, in each case, will not be included in determining whether or not a clinical trial is a Phase 3 Study or whether a patient has been dosed thereunder.

1.1.219 "**Phase 4 Optional Study**" any post-approval clinical study for a product in a country with respect to any Indication for which Regulatory Approval has been received in a particular country, including investigator-initiated clinical studies initiated after Regulatory Approval of a product or post-marketing surveillance studies of a product, in each case, that is not a Phase 4 Required Study.

1.1.220 "**Phase 4 Required Study**" means any post-approval clinical study initiated following receipt of Regulatory Approval for a product in a country in an Indication or to be conducted after receipt of Regulatory Approval of a product in an Indication, in each case, that was required by the applicable Regulatory Authority in any country in the Territory as a condition of receiving or maintaining a Regulatory Approval for such product with respect to such Indication in such country (such as post-marketing approval studies and observational studies, if required by any Regulatory Authority in any country in the Territory to support or maintain Regulatory Approval for such product in such Indication in such country) or that is required for a label extension for a product in such country.

1.1.221 "**Phase 4 Study**" means any Phase 4 Required Study or any Phase 4 Optional Study.

1.1.222 "**PhRMA Code**" means the Code of the Pharmaceutical Research and Manufacturers of America.

1.1.223 "**PM Strategy**" has the meaning set forth in Section 13.4.1.3(a) (IP Committee Responsibilities).

1.1.224 "**Post-Grant Proceedings**" means, with respect to a particular Patent, [**] and other similar proceedings by or against a Third Party with respect to such Patent.

1.1.225 "**PPD**" means the Indication that is Postpartum Depression.

1.1.226 "**Pre-Commercialization Expense Report**" has the meaning set forth in Section 9.3.2 (Reconciliation/Reimbursement Prior to First Commercial Sale).

1.1.227 "**Preapproved Subcontractor**" means any of the Subcontractors set forth on Schedule 1.1.227 (Preapproved Subcontractors) as such list may be updated from time-to-time as set forth in Section 3.9 (Development Subcontracts) or Section 5.14 (Commercialization Subcontracts), as applicable.

1.1.228 "**Pricing and Reimbursement Approval**" means an approval, agreement, determination or other decision by the applicable Governmental Authority of a country or jurisdiction that establishes prices charged to end-users for pharmaceutical or biologic products at which a particular pharmaceutical or biologic product will be reimbursed by the Regulatory Authority or other applicable Governmental Authority in such country or jurisdiction.

1.1.229 "**Pricing Matters**" means, with respect to a Licensed Product in the Profit-Share Territory, [**].

1.1.230 "**Principal Mode of Action**" means, for an individual molecule, [**].

1.1.231 "**Prior Confidentiality Agreement**" has the meaning set forth in Section 15.4 (Entire Agreement; Amendments).

1.1.232 "**Proceeding**" means any action, suit, claim, investigation or other proceeding.

1.1.233 "**Product Class**" means collectively, either (a) all Licensed 217 Products, or (b) all Licensed 324 Products.

1.1.234 "**Profit-Share Regulatory Strategy**" has the meaning set forth in Section 6.1 (Regulatory Lead Responsibilities).

1.1.235 "**Profit-Share Territory**" means the United States.

1.1.236 "**Promotional Materials**" means (a) all written, printed, graphic, digital, electronic, audio or video matter, including journal advertisements, sales visual aids, leave-behind items, formulary binders, reprints, direct mail, direct-to-consumer advertising, internet postings and sites and broadcast advertisements intended for use or used by or on behalf of either Party or their respective Affiliates in connection with any promotion of a Licensed Product, or in connection with market access, pricing, contracting or patient support activities related to a Licensed Product, and (b) all field and patient support training materials.

1.1.237 "**Promotional Materials Rules**" has the meaning set forth in Section 2.2.2.13 (Specific Responsibilities of the JSC).

1.1.238 "**Proposing Party**" has the meaning set forth in Section 3.3.2 (Additional Indications Development).

1.1.239 "**Prosecution and Maintenance**" means, with respect to a particular Patent, the preparation, filing, prosecution and maintenance of such Patent (and the foreign equivalents of any of the foregoing), [**]. "Prosecute and Maintain" and "Prosecuting and Maintaining" have corresponding meanings.

1.1.240 "**Post-Commercialization Expense Report**" has the meaning set forth in Section 9.3.3.2 (Calculation and Payment).

1.1.241 "**Publications**" means any and all publications, abstracts, posters and other presentations in scientific or medical journals or forums of data and results generated from activities in furtherance of this Agreement.

1.1.242 "**Publications Plan**" has the meaning set forth in Section 10.2.1 (Publication).

1.1.243 "**Receiving Party**" has the meaning set forth in Section 10.1.1 (Nondisclosure and Non-Use Obligations).

1.1.244 "**Region**" means any of [**].

1.1.245 "**Regulatory Approval**" means, with respect to a particular country or other regulatory jurisdiction, any approvals, licenses, registrations, or authorizations of any Regulatory Authority necessary for the Manufacture, Development, marketing, importation or sale of a product for one or more indications in such country or regulatory jurisdiction, excluding, if applicable, Pricing and Reimbursement Approvals in such country or regulatory jurisdiction.

1.1.246 "**Regulatory Authority**" means any Governmental Authority involved in granting approvals for the Development, Manufacturing or Commercialization of pharmaceutical products, including the FDA, the EMA, the European Commission, the Japanese Ministry of Health, Labour and Welfare, Japan's Pharmaceuticals and Medical Devices Agency and the People's Republic of China's National Medical Products Administration.

1.1.247 "**Regulatory Exclusivity**" means any exclusive marketing rights or data protection or other exclusivity rights (other than Patents) conferred by any Regulatory Authority with respect to a product in a country or jurisdiction in the Territory that prohibits the Commercialization of a Generic Product, including orphan drug exclusivity or pediatric exclusivity.

1.1.248 "**Regulatory Lead Party**" for a given activity has the meaning set forth in Section 6.1 (Regulatory Lead Responsibilities).

1.1.249 "**Regulatory Materials**" means (a) any submission to a Regulatory Authority, including all INDs, NDAs and other applications, registrations, licenses, authorizations and approvals (including Regulatory Approvals, Pricing and Reimbursement Approvals and product labeling) and designations (including designations of a product as an "orphan" drug or its equivalent outside of the United States), (b) correspondence, communication, materials, reports and documentation submitted to or received from Regulatory Authorities (including meeting requests, pre-meeting submissions, minutes and official contact reports relating to any communications with any Regulatory Authority) related to Developing, Manufacturing, obtaining marketing authorization, marketing, selling or otherwise Commercializing a pharmaceutical product in a particular country or jurisdiction, and all supporting documents with respect

thereto, including all investigator brochures, regulatory drug lists, drug safety and signaling update reports, adverse event files and complaint files (including product technical complaints communications and handling) and other material regulatory submissions and (c) Clinical Data contained in any of the foregoing, and any supplement or amendment to any of the foregoing.

1.1.250 "**Related Party(ies)**" means, (a) with respect to Biogen, Biogen's Affiliates and Sublicensees, and (b) with respect to Sage, Sage's Affiliates and Sublicensees.

1.1.251 "**Returned Country**" has the meaning set forth in Section 11.1.6 ([**]).

1.1.252 "**Reversion License**" has the meaning set forth in Section 14.6.2 (Reversion License).

1.1.253 "**Reversion Technology**" means, with respect to a Terminated Product in the Terminated Territory, [**].

1.1.254 "**Reversion Trademarks**" has the meaning set forth in Section 14.6.9 (Biogen Trademarks).

1.1.255 "**[**]**" has the meaning set forth in Section 11.6 ([**]).

1.1.256 "**Royalty Bearing Patents**" means, with respect to a Licensed Product, the Sage Licensed Patents, Biogen Collaboration Patents and Joint Collaboration Patents, in each case, that [**] of such Licensed Product.

1.1.257 "**Royalty Term**" means, with respect to a Licensed Product and a country, the period commencing upon the First Commercial Sale of such Licensed Product in such country and continuing until the later of: (a) expiration of the last Valid Claim of the last to expire of the Royalty-Bearing Patents that would be infringed (absent a license granted hereunder) by the sale of such Licensed Product in such country, (b) expiration of the Regulatory Exclusivity for such Licensed Product in such country, and (c) 12 years after the First Commercial Sale of such Licensed Product in such country.

1.1.258 "**[**]**" has the meaning set forth in Section 3.10.1 (Licensed [**] Product Development).

1.1.259 "**Sage**" has the meaning set forth in the preamble.

1.1.260 "**SAGE-[**]**" means (a) the molecule described on Schedule 1.1.260 (SAGE-[**]) or (b) any metabolite, salt, ester, hydrate, solvate, crystalline form, co-crystalline form, amorphous form, pro-drug (including ester pro-drug) form, racemate, polymorph, chelate, tautomer, stereoisomer, enantiomer, conjugate, complex, free acid, free base or optically active form thereof.

1.1.261 "**SAGE-217**" means (a) the molecule described on Schedule 1.1.261 (SAGE-217) or (b) any metabolite, salt, ester, hydrate, solvate, crystalline form, co-crystalline form, amorphous form, pro-drug (including ester pro-drug) form, racemate, polymorph, chelate, tautomer, stereoisomer, enantiomer, conjugate, complex, free acid, free base or optically active form thereof.

1.1.262 "**SAGE-324**" means (a) the molecule described on Schedule 1.1.262 (SAGE-324) or (b) any metabolite, salt, ester, hydrate, solvate, crystalline form, co-crystalline form, amorphous form, pro-drug (including ester pro-drug) form, racemate, polymorph, chelate, tautomer, stereoisomer, enantiomer, conjugate, complex, free acid, free base or optically active form thereof.

1.1.263 "**Sage Collaboration Patents**" means all Collaboration Patents that claim any Sage Collaboration Know-How, but expressly excluding Sage's interest in any Joint Collaboration Patents.

1.1.264 "**Sage Collaboration Know-How**" has the meaning set forth in Section 13.2.1 (Ownership).

1.1.265 "**Sage Collaboration Technology**" means the Sage Collaboration Know-How and Sage Collaboration Patents.

1.1.266 "**Sage Indemnitees**" has the meaning set forth in Section 12.1 (General Indemnification by Biogen).

1.1.267 "**Sage Licensed Know-How**" means any and all Know-How, other than Joint Collaboration Know-How, Controlled by Sage or any of its Affiliates (solely or jointly with any Third Party) as of the Execution Date or during the Term, that (a) is necessary for the Development, Manufacture, performance of Medical Affairs Activities with respect to or Commercialization of a Licensed Product in the Field in the Territory, or (b) is reasonably useful for the Development, Manufacture, performance of Medical Affairs with respect to or Commercialization of a Licensed Product in the Field in the Territory; *[**]*. The Sage Licensed Know-How includes all Sage Collaboration Know-How.

1.1.268 "**Sage Licensed Patents**" means any and all Patents, other than Joint Collaboration Patents, Controlled by Sage or any of its Affiliates (solely or jointly with any Third Party) as of the Execution Date or during the Term that (a) are necessary for or Cover the Development, Manufacture, performance of Medical Affairs with respect to or Commercialization of a Licensed Product in the Field in the Territory, or (b) are reasonably useful for the Development, Manufacture, performance of Medical Affairs Activities with respect to or Commercialization of a Licensed Product in the Field in the Territory *[**]*. The Sage Licensed Patents include all Sage Collaboration Patents. The Sage Licensed Patents existing as of the Execution Date are set forth on Schedule 1.1.268 (Sage Licensed Patents as of the Effective Date). Sage Licensed Patents exclude Sage's interest in the Joint Collaboration Patents.

1.1.269 "**Sage Licensed Technology**" means, collectively, the Sage Licensed Know-How, the Sage Licensed Patents and Sage's interest in the Joint Collaboration Technology and Joint Collaboration Technology.

1.1.270 "**Sage Molecule**" means SAGE-217 or SAGE-324.

1.1.271 "**Sage Prosecuted Patents**" has the meaning set forth in Section 13.4.3.1 (General).

1.1.272 "**Sales & Marketing Costs**" means the FTE Costs and Out-of-Pocket Costs incurred in the performance of the following sales and marketing activities for a Licensed Product in the Profit-Share Territory to the extent in accordance with applicable Law and applicable industry codes, including the PhRMA Code: (a) activities directed to the advertising and marketing of a Licensed Product in the Profit-Share Territory; (b) public relations with respect to a Licensed Product in the Profit-Share Territory; (c) peer-to-peer activities with respect to a Licensed Product in the Profit-Share Territory, such as 'lunch and learns'; (d) promotional speaker programs with respect to a Licensed Product in the Profit-Share Territory, including the training of such speakers; (e) developing, obtaining and providing training with respect field-based personnel and patient support with respect to a Licensed Product in the Profit-Share Territory, as well as training packages; (f) generating Promotional Materials; (g) developing and performing market research with respect to a Licensed Product in the Profit-Share Territory and developing branding and communications plans; (h) conducting promotional symposia with respect to a Licensed Product in the

Profit-Share Territory; (i) developing and implementing reimbursement programs with respect to a Licensed Product in the Profit-Share Territory; (j) patient support costs; and (k) developing information and materials specifically intended for national accounts, managed care organizations and group purchasing organizations with respect to a Licensed Product in the Profit-Share Territory and related interactions; but, in each case ((a)-(k)), excluding the costs and expenses of any activity the costs and expenses of which are already included in the any Detail Costs.

1.1.273 "**Sales Representative**" means a pharmaceutical sales representative engaged or employed by either Party to conduct Detailing and other promotional efforts with respect to the Licensed Products in the Profit-Share Territory in accordance with the terms of this Agreement.

1.1.274 "**Samples**" means a Licensed Product that is not intended to be sold and that is instead intended to promote the sale of such Licensed Product in the Profit-Share Territory in accordance with applicable Law.

1.1.275 "**Second Source**" has the meaning set forth in Section 7.6 (Second Source and Biogen Manufacturing Sites).

1.1.276 "**Securitization Transaction**" has the meaning set forth in Section 15.1.2 (Securitization).

1.1.277 "**Selling Party**" has the meaning set forth in Section 1.1.184 (Net Sales).

1.1.278 "**Serious Adverse Event**" has the meaning set forth in 21 C.F.R. § 312.32 and generally means an adverse drug experience or circumstance that results in any of the following outcomes (a) death, (b) life threatening condition, (c) inpatient hospitalization or a prolongation of existing hospitalization, (d) persistent or significant disability or incapacity or substantial disruption of the ability to conduct normal life functions, (e) a congenital anomaly/birth defect or (f) based upon appropriate medical judgment is considered an important medical event that may jeopardize the patient or subject and may require medical or surgical intervention to prevent one of the outcomes listed in this definition.

1.1.279 "**Shared Resource**" has the meaning set forth in Section 5.10 (Joint Commercialization Costs Allocation).

1.1.280 "**SPA**" has the meaning set forth in Section 9.2 (Equity Investment).

1.1.281 "**Strategic Enforcement or Defense Reasons**" has the meaning set forth in Section 13.5.2.1 (Rights to Enforce; In the Territory).

1.1.282 "**Strategic Prosecution Reasons**" has the meaning set forth in Section 13.4.2.2 (Sage Step-In).

1.1.283 "**Subcontractor**" means a Third Party contractor (including contract research organizations, contract manufacturing organizations or Third Party distributors) engaged by a Party or its Affiliates on a fee-for-service basis to perform certain services or activities on behalf of and for the benefit of such Party or its Affiliates or exercise certain rights on behalf of such Party or its Affiliates, in each case, under this Agreement.

1.1.284 "**Sublicensee**" means a Third Party to which a Party or its Affiliate has granted or grants rights under the rights granted to such Party pursuant to this Agreement to Develop, perform Medical Affairs Activities for or Commercialize a Licensed Product, or any further sublicensee of such rights

(regardless of the number of tiers, layers or levels of sublicenses of such rights), other than any Subcontractor that is granted any such sublicense or other rights solely for the purpose of performing specific limited services or activities solely on behalf of and for the benefit of a Party or its Affiliate.

1.1.285 "**Supply Agreement**" has the meaning set forth in Section 7.5 (Supply Agreement).

1.1.286 "**Supply Price**" has the meaning set forth in Section 7.3 (Manufacturing Costs).

1.1.287 "**Substitution Termination Date**" means, unless otherwise agreed by the Parties, the date on which [**].

1.1.288 "**Tax**" and "**Taxation**" means any U.S. and non-U.S. federal, state, local, regional, municipal, or other tax or taxation, levy, duty, charge, withholding or other assessment of any kind (including any related fine, penalty, addition to tax, surcharge, or interest) imposed by, or payable to, a Governmental Authority, including sales, use, excise, stamp, transfer, property, value added, goods and services, withholding, and franchise taxes (whether imposed directly or through withholding, and whether or not disputed).

1.1.289 "**Tax Partnership**" has the meaning set forth in Section 15.21.1.1 (Tax Matters).

1.1.290 "**Term**" has the meaning set forth in Section 14.1 (Term).

1.1.291 "**Terminated Products**" means all Licensed Products within a Product Class with respect to which this Agreement has been terminated pursuant to Article 14 (Term and Termination). All Licensed 217 Products will be deemed Terminated Products if this Agreement is terminated with respect to the Product Class of Licensed 217 Products and all Licensed 324 Products will be deemed Terminated Products if this Agreement is terminated with respect to the Product Class of Licensed 324 Products. All Licensed Products will be deemed Terminated Products if this Agreement is terminated in its entirety.

1.1.292 "**Terminated Territory**" means, on a Product Class-by-Product Class basis, those countries with respect to which this Agreement has been terminated for such Product Class in accordance with Article 14 (Term and Termination). The Terminated Territory will be worldwide if this Agreement is terminated in its entirety with respect to a Product Class.

1.1.293 "**Territory**" means, collectively, the Profit-Share Territory and the Biogen Territory.

1.1.294 "**Third Party**" means any Person other than Biogen, Sage or their respective Affiliates.

1.1.295 "**Third Party Action**" has the meaning set forth in Section 13.5.3 (Defense and Post-Grant Proceedings).

1.1.296 "**Third Party Claims**" has the meaning set forth in Section 12.1 (General Indemnification by Biogen).

1.1.297 "**Third Party Manufacturing Agreements**" has the meaning set forth in Section 7.8.2 (Third Party Agreements).

1.1.298 "**Third Party Payments**" has the meaning set forth in Section 8.3.2 (After Effective Date Executed In-License Agreements).

1.1.299 "**Trademark**" means any trademark, trade name, service mark, service name, brand, domain name, trade dress, logo, slogan or other indicia of origin or ownership, including the goodwill and activities associated with each of the foregoing.

1.1.300 "**Trademark Costs**" means the fees and expenses paid to outside counsel and other Third Parties, in each case, in connection with the establishment and maintenance of rights for Trademarks, including costs of filing, registration, maintenance and renewal fees, actions to enforce or defend a Trademark and other Trademark proceedings, but expressly excluding all Sales and Marketing Costs.

1.1.301 "**TRD**" means the Indication that is Treatment-Resistant Depression.

1.1.302 "**United States**" means the United States and its territories, possessions and commonwealths.

1.1.303 "**United States Royalties**" has the meaning set forth in Section 9.8.2 (United States Royalties).

1.1.304 "**Valid Claim**" means (a) a claim of an issued, unexpired patent that has not been rejected, revoked or held to be invalid, unenforceable or unpatentable by a court or other authority of competent jurisdiction, from which decision no appeal can be further taken, and which claim has not been finally abandoned, disclaimed or admitted to be invalid, unenforceable or unpatentable, including through reissue or disclaimer or (b) a pending claim of an unissued, pending patent application that has been prosecuted in good faith and has not been pending for more than [**] and which claim has not been revoked, cancelled, withdrawn, held invalid or abandoned in the country of question, in which case it will cease to be considered a Valid Claim, unless the patent application issues and recites said claim and otherwise satisfies clause (a) of this definition.

1.1.305 "**VAT**" means, within the European Union, such Tax as may be charged in accordance with (but subject to derogations from) Directive 2006/112/EC and, outside the European Union, value added Tax or any form of consumption Tax, as well as all other forms of Taxes charged on the supply of a good or a service, including but not limited to sales Tax and goods and services Tax.

1.1.306 "**VAT Restructuring**" has the meaning set forth in Section 9.11.5.2 (VAT).

1.1.307 "**WATERFALL Study**" means a placebo-controlled Phase 3 Study evaluating a two-week course of zuranolone 50 mg in patients with MDD, with additional short-term follow-up.

1.1.308 "**Withholding Taxes**" has the meaning set forth in Section 9.11.5.1 (General).

2. GOVERNANCE

2.1 **Alliance Manager**. Promptly following the Effective Date, each Party will designate an individual to facilitate communication and coordination of the Parties' activities under this Agreement relating to the Licensed Products (each, an "**Alliance Manager**"). For clarity, an Alliance Manager will not be a representative of its respective Party on any Committee, and will have no voting right on any Committee, unless otherwise agreed in writing by the Parties.

2.2 Joint Steering Committee.

2.2.1 *Formation; Composition; Dissolution*. Within [**] after the Effective Date, the Parties will establish a committee (the "**Joint Steering Committee**" or "**JSC**") to provide strategic oversight of the Parties' activities under this Agreement. Each Party will initially appoint [**] representatives to the JSC, with each representative having knowledge and expertise in the Development, Manufacture, performance of Medical Affairs with respect to and Commercialization of molecules and products similar to the Licensed Products, and having sufficient decision-making authority and seniority within the applicable Party to provide meaningful input and make decisions arising within the scope of the JSC's responsibility. The JSC may change its size from time to time by agreement of the Parties, *provided* that the JSC will consist at all times of an equal number of representatives of each of Sage and Biogen. Each Party may replace its JSC representatives at any time upon written notice to the other Party. The JSC will be chaired by co-chairpersons designated by Sage and Biogen, respectively. The JSC co-chairpersons may invite non-members to participate in the discussions and meetings of the JSC, if necessary, *provided* that such participants have no voting authority at the meetings of the JSC and are bound under enforceable obligations of confidentiality and non-use no less protective of the Parties' Confidential Information than those set forth in this Agreement. The JSC co-chairpersons' responsibilities will include conducting meetings, including, when feasible, ensuring that objectives for each meeting are set and achieved. The JSC will exist for so long as the JDC or JCC exists or there is at least one Licensed Product being Commercialized under this Agreement.

2.2.2 *Specific Responsibilities of the JSC*. The JSC will have the following responsibilities:

2.2.2.1 reviewing, discussing and determining whether to approve all annual and interim amendments to each Joint Development Plan and each corresponding Joint Development Budget for the Licensed 217 Products and the Licensed 324 Products (including the designation of Development Lead Party between the Parties for each of the activities thereunder, changes to the Major Development Activities, and the proposed allocation of responsibility between the Parties for each of the activities thereunder), as proposed by the JDC, including, in each case, to add to the applicable Joint Development Plan any Clinical Study or Indication, as described in Section 3.2 (Joint Development Plans) and Section 3.3 (Operational Responsibilities for Development; Additional Development);

2.2.2.2 determining whether any proposed Additional Indication Development would result in a Material Adverse Product Effect, as described in Section 3.3.2 (Additional Indications Development);

2.2.2.3 reviewing, discussing and determining whether to approve each Joint Medical Affairs Plan and corresponding Joint Medical Affairs Budget for the Licensed 217 Products and the Licensed 324 Products and all annual and interim amendments thereto (including the designation of Medical Affairs Lead Party between the Parties for each of the activities thereunder, changes to the Major Medical Affairs Activities and the proposed allocation of responsibility between the Parties for each of the activities thereunder), as recommended by the Joint Medical Affairs Subcommittee, as described in Section 4.2 (Joint Medical Affairs Plan), as described in Section 4.2.2 (Amendments to Joint Medical Affairs Plans);

2.2.2.4 reviewing, discussing and determining whether to approve each Joint Commercialization Plan and the corresponding Joint Commercialization Budget for the Licensed 217 Products and the Licensed 324 Products and all annual and interim amendments thereto (including the designation of Commercialization Lead Party between the Parties for each of the

activities thereunder, changes to the Major Commercialization Activities, and the proposed allocation of responsibility between the Parties for each of the activities thereunder), as recommended by the JCC, each as described in Section 5.2 (Joint Commercialization Plans), as such plans and amendments may be submitted to the JSC by the JCC, as described in Section 5.2.2 (Amendments to Joint Commercialization Plans);

2.2.2.5 reviewing, discussing and determining whether to approve each Distribution Plan for the Licensed 217 Products and the Licensed 324 Products, as such plans and amendments may be submitted to the JSC by the JCC, as described in Section 5.7.3 (Distribution in the Profit-Share Territory);

2.2.2.6 approving FTE rates included in clause (b) of Section 1.1.101 (FTE Rate) and approving [**];

2.2.2.7 reviewing, discussing and determining whether to approve the Pricing Matters for Licensed Products for the Profit-Share Territory submitted to the JSC by the JCC; *[**]*;

2.2.2.8 reviewing, discussing and determining whether to approve the rate to be applied to determine Detail Costs that are included in the Joint Commercialization Costs for Licensed Products in the Profit-Share Territory, as described in Section 5.9 (Detail Costs; Authority over Sales Forces);

2.2.2.9 reviewing and discussing [**];

2.2.2.10 reviewing, discussing and determining whether to approve the Branding Strategy recommended by the JCC for each Licensed Product in the Profit-Share Territory, including the selection and use of all LP U.S. Trademarks, as described in Section 5.11.1 (Branding);

2.2.2.11 reviewing, discussing and determining whether to approve the packaging and labeling recommended by the applicable Regulatory Lead Party for each Licensed Product in the Profit-Share Territory, as described in Section 5.11.3 (Licensed Product Packaging);

2.2.2.12 reviewing, discussing and determining whether to approve the LP U.S. TM Strategy recommended by the JCC, as described in Section 5.11.4.1 (Profit-Share Territory);

2.2.2.13 developing the process by which the Parties will approve the Promotional Materials relating to each Licensed Product to be used in the Profit-Share Territory such that, unless the Parties otherwise agree, appropriate representatives of each Party will approve such Promotional Materials, and reviewing, discussing and determining whether to approve the key messaging to be included in such Promotional Materials (the "**Promotional Materials Rules**"), as described in Section 5.11.2 (Promotional Materials);

2.2.2.14 in addition to those responsibilities set forth in Section 2.2.2.6 (with respect to changes to Pricing Matters) and Section 2.2.2.10 (with respect to changes to Branding Strategy), reviewing, discussing and determining whether to approve decisions for and any changes to the Major Commercialization Activities;

2.2.2.15 discussing and determining whether to approve the Regulatory Strategy for the Licensed Products in the Profit-Share Territory, as described in Section 6.1 (Regulatory Lead Responsibilities);

2.2.2.16 serving as a forum for the Parties to exchange information relating to NDAs for the Licensed Products in the Territory, as described in Section 6.6 (Submissions);

2.2.2.17 discussing and determining whether to conduct a recall of a Licensed Product in the Profit-Share Territory, as described in Section 6.9 (Recalls, Market Withdrawals or Corrective Actions);

2.2.2.18 determining whether [**];

2.2.2.19 reviewing, discussing and determining whether to approve [**];

2.2.2.20 reviewing, discussing and determining whether to approve the engagement of a Second Source by Sage during the period for which Sage is the Manufacturing Lead Party and reviewing and discussing the engagement of a Second Source by Biogen, in each case, as described in Section 7.6 (Second Source and Biogen Manufacturing Sites);

2.2.2.21 reviewing, discussing and determining whether to approve the execution by either Party of any agreement for New Technology for the Profit-Share Territory (including the terms thereof), as described in Section 8.3.2 Licensed Product (After Effective Date Executed In-License Agreements);

2.2.2.22 reviewing, discussing and determining whether to approve a Publications Plan for each Product Class, and any additions or other amendments to an existing Publications Plan, as described in Section 10.2.1 (Publication) and create a process to operationalize the implementation of a Publications Plan;

2.2.2.23 reviewing, discussing and determining how to resolve any disagreement between the Parties as to the contents of any Publication relating to any Licensed Product in the Profit-Share Territory, which resolution must be consistent with the applicable Publications Plan (unless otherwise agreed by the Parties), as described in Section 10.2.1 (Right to Review);

2.2.2.24 reviewing, discussing and determining how to resolve any issues escalated by, or disputes within, the JDC, Joint Medical Affairs Subcommittee, JCC or the Finance Working Group;

2.2.2.25 establishing such additional committees or subcommittees of the JSC as it deems necessary to oversee activities relating to the Licensed Products under this Agreement; and

2.2.2.26 performing such other functions expressly allocated to the JSC in this Agreement or by the written agreement of the Parties.

2.2.3 *Meetings*. The JSC will meet at least [**] times per Calendar Year, unless the Parties agree in writing to a different frequency. The JSC may meet in person, by videoconference, or by teleconference, *provided* that at least [**] of the JSC per Calendar Year will be in person unless the Parties otherwise agree. In-person JSC meetings will be held at locations in Massachusetts alternately selected by Sage and by Biogen, or at any other location agreed by the members of the JSC. The first JSC meeting will be held within [**] of the Effective Date. Meetings of the JSC will be effective only if a quorum is present, which quorum will require the presence of at least one (1) representative from each Party. Each Party will bear the expense of its respective JSC members' participation in JSC meetings. No later than [**] prior to any meeting of the JSC (or such shorter time period as the Parties may agree), the JSC co-chairpersons will work with the Alliance Managers to prepare and circulate an agenda for such meeting; *provided, however*,

that additional topics may be included on such agenda prior to the meeting, and the Party or the Committee proposing an item will provide materials to the JSC representatives no later than [**] prior to the JSC meeting to support discussion. A JSC co-chairperson may also call a special meeting of the JSC (by videoconference, teleconference or in person) if such JSC co-chairperson reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, in which event such JSC co-chairperson will work with the Alliance Managers to provide the members of the JSC, promptly after the decision is made to hold such special JSC meeting, with an agenda for the meeting and materials reasonably adequate to enable an informed decision. The Alliance Managers working with the JSC co-chairpersons will be responsible for preparing reasonably detailed written minutes of JSC meetings that reflect all decisions made and action items identified at such meetings within [**] after each JSC meeting, and endeavor to finalize such minutes within [**] after each JSC meeting.

2.2.4 *Decision-Making*. The JSC will endeavor to reach decisions by consensus, with each Party, through its representative members of the JSC, having one (1) vote. Approvals of the JSC will require the unanimous agreement of the representatives. If the JSC cannot reach unanimous agreement on an issue that comes before the JSC within [**] of the meeting at which such issue was raised and over which the JSC has oversight, then the Parties will refer such issue for resolution in accordance with Section 2.5 (Resolution of Committee Disputes).

2.3 Joint Development Committee.

2.3.1 *Formation; Composition; Dissolution*. Within [**] after the Effective Date, the Parties will establish (a) a committee to coordinate the Development of the Licensed 217 Products in the Territory, and (b) a committee to coordinate the Development of the Licensed 324 Products in the Territory (each, a "**Joint Development Committee**" or "**JDC**"). Each Party will initially appoint [**] representatives to each JDC, with each representative having knowledge and expertise in the Development of molecules and products similar to, as applicable, the applicable Licensed Products, and having sufficient seniority and decision-making authority within the applicable Party to provide meaningful input and make decisions arising within the scope of such JDC's responsibilities. Each Party's JDC representatives may serve on one or more JDCs. Each JDC may change its size from time to time by agreement of the Parties, *provided* that each JDC will consist at all times of an equal number of representatives of each of Sage and Biogen. Each Party may replace its JDC representatives at any time upon written notice to the other Party. Each JDC may invite non-members to participate in the discussions and meetings of such JDC, *provided* that such participants have no voting authority at the meetings of such JDC and are bound under enforceable obligations of confidentiality and non-use no less protective of the Parties' Confidential Information than those set forth in this Agreement. Each JDC will be chaired by co-chairpersons designated by Sage and Biogen, respectively, whose responsibilities will include conducting meetings, including, when feasible, ensuring that objectives for each meeting are set and achieved. The respective applicable JDC will exist for so long as at least one Licensed Product is being Developed under this Agreement.

2.3.2 *Specific Responsibilities of the JDC*. The respective applicable JDC will have the following responsibilities:

2.3.2.1 discussing, preparing and determining whether to approve for submission to the JSC each Joint Development Plan (including the designation of Development Lead Party between the Parties and changes to the Major Development Activities thereunder and the corresponding Joint Development Budget) for the Licensed 217 Products and the Licensed 324 Products, including, in each case, and all annual and interim amendments thereto to add to the applicable Joint Development Plan any Clinical Study or Indications, as described in Section 3.2 (Joint Development Plans) and Section 3.3 (Operational Responsibilities for Development; Additional Development);

2.3.2.2 overseeing, reviewing and discussing the Development of each Licensed Product in the Profit-Share Territory, including (a) overseeing the conduct of all Clinical Studies and Nonclinical Studies, (b) discussing updates from the Parties regarding such Development, and (c) updating the JSC on such Development, in each case, in a manner consistent with Article 3 (Development);

2.3.2.3 (a) determining whether and when to initiate or discontinue any Clinical Studies and any Nonclinical Study that is set forth under each Joint Development Plan, (b) reviewing, discussing and determining whether to approve the final protocols for Clinical Studies and Nonclinical Studies, and (c) reviewing, discussing and determining priorities for each Clinical Study and Nonclinical Study under each Joint Development Plan, *provided* that the foregoing is not intended to limit a Party's ability to comply with applicable Law or manage subject safety, in each case, in a manner consistent with Article 3 (Development);

2.3.2.4 determining whether to conduct further Development of the Licensed [**] Products, and, if the JDC so determines, then also determining each Party's responsibilities for the performance of such Development activities and the budget therefor, as described in Section 3.10.1 (Licensed [**] Product Development);

2.3.2.5 at any time during the period commencing as of the Effective Date and ending upon the Substitution Termination Date, determining whether to approve the substitution of the Licensed [**] Product for the Licensed 217 Products or the Licensed 324 Products, as described in Section 3.10.1 (Licensed [**] Product Development);

2.3.2.6 determining the feasibility and timing of pursuing, and overseeing collaboration on, new formulations of any Licensed Product for the Profit-Share Territory, in a manner consistent with Article 3 (Development), for inclusion in the applicable Joint Development Plan;

2.3.2.7 serving as a forum for exchange and discussion with respect to Development reports for the Licensed Products for the Profit-Share Territory, as described in Section 3.5 (Development Reports);

2.3.2.8 [**];

2.3.2.9 establishing a process for each Party's disclosure of Regulatory Materials and Know-How to facilitate the technology and materials transfer described in Section 3.8 (Technology and Materials Transfer);

2.3.2.10 reviewing and approving any [**] that is not a [**] and that a Party proposes to engage, as described in Section [**];

2.3.2.11 recommending to the JSC for approval the overall strategy for obtaining Regulatory Approval of the Licensed Products in the Profit-Share Territory, including the content of label or other prescribing information, and overseeing implementation of such strategy as approved by the JSC, in a manner consistent with Article 6 (Regulatory);

2.3.2.12 developing and implementing procedures for the drafting and review of Regulatory Materials for the Licensed Products in the Profit-Share Territory, in a manner consistent with Article 6 (Regulatory);

2.3.2.13 overseeing the Parties activities under the Pharmacovigilance Agreement, as described in Section 6.10 (Reporting Adverse Events);

2.3.2.14 determining whether to Develop any EP-Enhanced 217 Product, as described in Section 8.3.1.3(b) (Third Party Payments owed to Existing Partner);

2.3.2.15 [**]; and

2.3.2.16 performing such other functions expressly allocated to the JDC in this Agreement or by the written agreement of the Parties.

2.3.3 *Meetings*. Each JDC will meet at least [**] times per Calendar Year, unless the Parties agree in writing to a different frequency. Each JDC may meet in person, by videoconference, or by teleconference, *provided* that at least [**] of each JDC per Calendar Year will be in person unless the Parties otherwise agree. In-person JDC meetings will be held at locations in Massachusetts alternately selected by Sage and by Biogen, or at any other location agreed by the members of the respective applicable JDC. Meetings of each JDC will be effective only if a quorum is present, which quorum will require the presence of at least one (1) representative of each Party. Each Party will bear the expense of its respective JDC members' participation in JDC meetings. No later than [**] prior to the first meeting of the respective applicable JDC in the 2020 stub-Calendar Year and in each Calendar Year thereafter while such JDC exists, the co-chairpersons for such JDC will prepare a communication plan setting forth a schedule of the dates of each meeting of such JDC for that Calendar Year (a "**JDC Communication Plan**"). No later than [**] prior to any meeting of the respective applicable JDC (or such shorter time period as the Parties may agree), the co-chairpersons of such JDC will work with the Alliance Managers to prepare and circulate an agenda for such meeting; *provided, however*, that additional topics may be included on such agenda prior to such meeting, and the Party proposing an item will provide detailed materials to the representatives of such JDC no later than [**] prior to the JDC meeting to support discussion. A JDC co-chairperson may also call a special meeting of its JDC (by videoconference, teleconference or in person) if such JDC co-chairperson reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, in which event such JDC co-chairperson will work with the Alliance Managers to provide the members of such JDC, promptly after the decision is made to hold such special JDC meeting, with an agenda for the meeting and materials reasonably adequate to enable an informed decision. The co-chairpersons of their respective applicable JDC will be responsible for preparing reasonably detailed written minutes of meetings of such JDC that reflect all decisions made and action items identified at such meetings within [**] after each meeting of such JDC, and endeavor to finalize such minutes within [**] after each meeting of such JDC.

2.3.4 *Decision-Making*. The JDC will endeavor to reach decisions by consensus, with each Party, through its representative members of the JSC, having one (1) vote. Approvals of each respective applicable JDC matter will require the unanimous agreement of the representatives. If a JDC cannot reach unanimous agreement on a matter issue that comes before it within [**] of the meeting at which such issue was raised and over which such JDC has oversight, then the Parties will refer such issue for resolution to the JSC.

2.4 Joint Commercialization Committee.

2.4.1 *Formation; Composition; Dissolution*. (a) Within [**] after the Effective Date, the Parties will establish a committee to coordinate and oversee Commercialization activities with respect to the Licensed 217 Products for the Profit-Share Territory, and (b) within [**] after the Initiation of the [**] for the Licensed 324 Products or such other time as agreed by the Parties, the Parties will establish a committee to coordinate Commercialization activities with respect to the Licensed 324 Products for the

Profit-Share Territory (each, a "**Joint Commercialization Committee**" or "**JCC**"). Each Party will initially appoint [**] representatives to each JCC, with each representative having knowledge and expertise in the performance of Commercialization of products similar to the applicable Licensed Products, and having sufficient seniority and decision-making authority within the applicable Party to provide meaningful input and make decisions arising within the scope of such JCC's responsibilities. Each Party's JCC representatives may serve on one or more JCCs. Each JCC may change its size from time to time by agreement of the Parties, *provided* that each JCC will consist at all times of an equal number of representatives of each of Sage and Biogen. Each Party may replace its JCC representatives at any time upon written notice to the other Party. Each JCC may invite non-members to participate in the discussions and meetings of such JCC, *provided* that such participants have no voting authority at the meetings of such JCC and are bound under enforceable obligations of confidentiality and non-use no less protective of the Parties' Confidential Information than those set forth in this Agreement. Each JCC will be chaired by co-chairpersons designated by Sage and Biogen, respectively, whose responsibilities will include conducting meetings, including, when feasible, ensuring that objectives for each meeting are set and achieved. The respective applicable JCC will exist for so long as at least one Licensed Product is being Commercialized or Commercialization is planned under this Agreement.

2.4.2 *Specific Responsibilities of the JCC*. Subject to any limitations under applicable Law, the respective applicable JCC will have the following responsibilities:

2.4.2.1 coordinating with the Joint Medical Affairs Subcommittee to discuss Medical Affairs Activities to the extent relevant to the Commercialization strategy (including the Medical Affairs Activities strategy) and the overall Commercialization strategy for the Licensed Products for the Profit-Share Territory (including the Medical Affairs Activities strategy);

2.4.2.2 determining the anticipated date of First Commercial Sale of each Licensed Product in the Profit-Share Territory, as described in Section 1.1.150 (Launch Window);

2.4.2.3 discussing, preparing and determining whether to approve for submission to the JSC each Joint Commercialization Plan for the Licensed 217 Products and the Licensed 324 Products (including the designation of Commercialization Lead Party between the Parties and changes to the Major Commercialization Activities thereunder and the corresponding Joint Commercialization Budget) and all annual and interim amendments thereto, as described in Section 5.2 (Joint Commercialization Plans) and Section 5.4 (Operational Responsibilities for Commercialization);

2.4.2.4 overseeing the implementation of the Joint Commercialization Plans in a manner consistent with Article 5 (Commercialization);

2.4.2.5 discussing, preparing and determining whether to approve for submission to the JSC each Distribution Plan for the Licensed 217 Products and the Licensed 324 Products and all annual and interim amendments thereto, as described in Section 5.7.3 (Distribution in the Profit-Share Territory);

2.4.2.6 serving as a forum for exchange and discussion with respect to Commercialization reports for Licensed Products for the Profit-Share Territory, as described in Section 5.6 (Commercialization Reports);

2.4.2.7 [**], as described in Section [**];

2.4.2.8 reviewing, discussing and determining Pricing Matters, including the strategy with respect to Pricing Matters, for the Licensed Products for the Profit-Share Territory and [**], as described in Section 5.7.1 (Pricing Matters);

2.4.2.9 reviewing and approving any [**] that is not a [**] and that a Party proposes to engage, as described in Section [**];

2.4.2.10 reviewing and discussing a Party's promotion of [**] using Shared Resources in the Profit-Share Territory [**], as described in Section 5.10 (Joint Commercialization Costs Allocation);

2.4.2.11 reviewing, discussing and determining whether to approve the Branding Strategy for the Licensed Products in the Profit-Share Territory and making a recommendation to the JSC on such strategy for the JSC to determine whether to approve, as described in Section 5.11.1 (Branding);

2.4.2.12 discussing and determining whether to submit to the JSC to further review, discuss and determine whether to approve the LP U.S. TM Strategy, as described in Section 5.11.4.1 (Profit-Share Territory); and

2.4.2.13 performing such other functions expressly allocated to the JCC in this Agreement or by the written agreement of the Parties.

2.4.3 *Meetings*. Each JCC will meet at least [**] times per Calendar Year, together with the applicable Joint Medical Affairs Subcommittee, unless the Parties agree in writing to a different frequency. Each JCC may meet in person, by videoconference, or by teleconference, *provided* that at least [**] of each JCC per Calendar Year will be in person unless the Parties otherwise mutually agree. In-person JCC meetings will be held at locations in Massachusetts alternately selected by Sage and by Biogen, or at any other location agreed by the members of the respective applicable JCC. Meetings of each JCC will be effective only if a quorum is present, which quorum will require the presence of at least one (1) representative of each Party. Each Party will bear the expense of its respective JCC members' participation in JCC meetings. No later than [**] prior to the first meeting of the respective applicable JCC in the 2020 stub-Calendar Year and in each Calendar Year thereafter while such JCC exists, the co-chairpersons for such JCC will prepare a communication plan setting forth a schedule of the dates of each meeting for such JCC for that Calendar Year (a "**JCC Communication Plan**"). No later than [**] prior to any meeting of the respective applicable JCC (or such shorter time period as the Parties may agree), the co-chairpersons of such JCC will work with the Alliance Managers to prepare and circulate an agenda for such meeting; *provided*, *however*, that additional topics may be included on such agenda, prior to the meeting, and the Party proposing an item will provide materials to the representatives of such JCC no later than [**] prior to the JCC meeting to support discussion. A JCC co-chairperson may also call a special meeting of its JCC (by videoconference, teleconference or in person) if such JCC co-chairperson reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, in which event such JCC co-chairperson will work with the Alliance Managers to provide the members of such JCC, promptly after the decision is made to hold such special JCC meeting, with an agenda for the meeting and materials reasonably adequate to enable an informed decision. The co-chairpersons of their respective applicable JCC will be responsible for preparing reasonably detailed written minutes of meetings of such JCC that reflect all decisions made and action items identified at such meetings within [**] after such meeting of such JCC, and endeavor to finalize such minutes within [**] after each meeting of such JCC.

2.4.4 *Decision-Making*. The JCC will endeavor to reach decisions by consensus, with each Party, through its representative members of the JCC, having one (1) vote. Approvals of each

respective applicable JCC matter will require the unanimous agreement of the representatives. If a JCC cannot reach unanimous agreement on a matter that comes before it within [**] of the meeting at which such issue was raised and over which such JCC has oversight, then the Parties will refer such issue for resolution to the JSC.

2.5 Joint Medical Affairs Subcommittee.

2.5.1 *Formation; Composition; Dissolution*. (a) Within [**] after the Effective Date, the Parties will establish a subcommittee of the JCC to coordinate and oversee Medical Affairs Activities with respect to the Licensed 217 Products for the Profit-Share Territory, and (b) within [**] after the Initiation of the [**] for the Licensed 324 Products or such other time as agreed by the Parties, the Parties will establish a subcommittee of the JCC to coordinate and oversee Medical Affairs Activities with respect to the Licensed 324 Products for the Profit-Share Territory (each, a "**Joint Medical Affairs Subcommittee**"). Each Party will initially appoint [**] representatives to the Joint Medical Affairs Subcommittee, with each representative having knowledge and expertise in the performance of Medical Affairs Activities with respect to products similar to the applicable Licensed Products, holding a position within such Party's Medical Affairs or research and development departments (but not holding a position within such Party's Commercialization department), and having sufficient seniority and decision-making authority within the applicable Party to provide meaningful input and make decisions arising within the scope of such Joint Medical Affairs Subcommittee's responsibilities. Each Party's Joint Medical Affairs Subcommittee's representatives may serve on one or more Joint Medical Affairs Subcommittees. Each Joint Medical Affairs Subcommittee may change its size from time to time by agreement of the Parties, provided that each Joint Medical Affairs Subcommittee will consist at all times of an equal number of representatives of each of Sage and Biogen. Each Party may replace its Joint Medical Affairs Subcommittee representatives at any time upon written notice to the other Party. Each Joint Medical Affairs Subcommittee may invite non-members to participate in the discussions and meetings of such Joint Medical Affairs Subcommittee, provided that such participants have no voting authority at the meetings of such Joint Medical Affairs Subcommittee and are bound under enforceable obligations of confidentiality and non-use no less protective of the Parties' Confidential Information than those set forth in this Agreement. Each Joint Medical Affairs Subcommittee will be chaired by co-chairpersons designated by Sage and Biogen, respectively, whose responsibilities will include conducting meetings, including, when feasible, ensuring that objectives for each meeting are set and achieved. The respective applicable Joint Medical Affairs Subcommittee will exist for so long as there are Medical Affairs Activities being conducted or planned to be conducted for at least one Licensed Product under this Agreement.

2.5.2 *Specific Responsibilities of the Joint Medical Affairs Subcommittee*. Subject to any limitations under applicable Law, the respective applicable Joint Medical Affairs Subcommittee will have the following responsibilities:

2.5.2.1 discussing, preparing and determining whether to approve for submission to the JSC each Joint Medical Affairs Plan for the Licensed 217 Products and the Licensed 324 Products, (including the designation of Medical Affairs Lead Party between the Parties, changes to the Major Medical Affairs Activities thereunder and the corresponding Joint Medical Affairs Budget) and all annual and interim amendments thereto, as described in Section 4.2 (Joint Medical Affairs Plan) and Section 4.3 (Operational Responsibilities for Medical Affairs Activities);

2.5.2.2 serving as a forum for exchange and discussion with respect to Medical Affairs Activities reports for Licensed Products for the Profit-Share Territory and [**], as described in Section 4.5 (Medical Affairs Reports);

2.5.2.3 via the Joint Publications Working Group, reviewing, discussing and recommending to the JSC to further review, discuss and determine whether to approve, a Publications Plan for each Product Class, and any additions or other amendments to an existing Publications Plan, as described in Section 10.2.1 (Publication); and

2.5.2.4 performing such other functions expressly allocated to the Joint Medical Affairs Subcommittee in this Agreement or by the written agreement of the Parties.

2.5.3 *Meetings*. Each Joint Medical Affairs Subcommittee will meet at least [**] times per Calendar Year, together with the applicable JCC (in which case the meeting logistics of Section 2.4.3 (Meetings) will apply), unless the Parties agree in writing to a different frequency, and will meet separately from the JCC on such frequency as is agreed by the Parties with respect to Medical Affairs Activities-specific matters. Each Joint Medical Affairs Subcommittee may meet in person, by videoconference, or by teleconference, *provided* that at least [**] of each Joint Medical Affairs Subcommittee per Calendar Year will be in person unless the Parties otherwise mutually agree. With respect to any independent meetings of the Joint Medical Affairs Subcommittee regarding Medical Affairs Activities-specific matters, in-person meetings will be held at locations in Massachusetts alternately selected by Sage and by Biogen, or at any other location agreed by the members of the respective applicable Joint Medical Affairs Subcommittee. Meetings of each Joint Medical Affairs Subcommittee will be effective only if a quorum is present, which quorum will require the presence of at least one (1) representative of each Party. Each Party will bear the expense of its respective Joint Medical Affairs Subcommittee members' participation in Joint Medical Affairs Subcommittee meetings. No later than [**] prior to the first meeting of the respective applicable Joint Medical Affairs Subcommittee in the 2020 stub-Calendar Year and in each Calendar Year thereafter while such Joint Medical Affairs Subcommittee exists, the co-chairpersons for such Joint Medical Affairs Subcommittee will prepare a communication plan setting forth a schedule of the dates of each meeting for such Joint Medical Affairs Subcommittee for that Calendar Year (a "**Joint Medical Affairs Subcommittee Communication Plan**"). No later than [**] prior to any meeting of the respective applicable Joint Medical Affairs Subcommittee (or such shorter time period as the Parties may agree), the co-chairpersons of such Joint Medical Affairs Subcommittee will work with the Alliance Managers to prepare and circulate an agenda for such meeting; *provided*, *however*, that additional topics may be included on such agenda, prior to the meeting, and the Party proposing an item will provide materials to the representatives of such Joint Medical Affairs Subcommittee no later than [**] prior to the Joint Medical Affairs Subcommittee meeting to support discussion. A Joint Medical Affairs Subcommittee co-chairperson may also call a special meeting of its Joint Medical Affairs Subcommittee (by videoconference, teleconference or in person) if such Joint Medical Affairs Subcommittee co-chairperson reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, in which event such Joint Medical Affairs Subcommittee co-chairperson will work with the Alliance Managers to provide the members of such Joint Medical Affairs Subcommittee, promptly after the decision is made to hold such special Joint Medical Affairs Subcommittee meeting, with an agenda for the meeting and materials reasonably adequate to enable an informed decision. The co-chairpersons of their respective applicable Joint Medical Affairs Subcommittee will be responsible for preparing reasonably detailed written minutes of meetings of such Joint Medical Affairs Subcommittee that reflect all decisions made and action items identified at such meetings within [**] after such meeting of such Joint Medical Affairs Subcommittee, and endeavor to finalize such minutes within [**] after each meeting of such Joint Medical Affairs Subcommittee.

2.5.4 *Decision-Making*. The Joint Medical Affairs Subcommittee will endeavor to reach decisions by consensus, with each Party, through its representative members of the Joint Medical Affairs Subcommittee, having one (1) vote. Approvals of each respective applicable Joint Medical Affairs Subcommittee matter will require the unanimous agreement of the representatives. If a Joint Medical Affairs Subcommittee cannot reach unanimous agreement on a matter that comes before it within [**] of

the meeting at which such issue was raised and over which such Joint Medical Affairs Subcommittee has oversight, then the Parties will refer such issue for resolution to the JSC.

2.6 Joint Manufacturing Committee.

2.6.1 *Formation; Composition; Dissolution*. Within [**] after the Effective Date, the Parties will establish a committee to coordinate and oversee Manufacturing activities with respect to the Licensed 217 Products for the Profit-Share Territory, and (b) within [**] after the Effective Date, the Parties will establish a committee to coordinate and oversee Manufacturing Activities with respect to the Licensed 324 Products for the Profit-Share Territory (each, a "**Joint Manufacturing Committee**" or "**JMC**"). Each Party will initially appoint [**] representatives to the JMC, with each representative having knowledge and expertise in the performance of Manufacturing activities with respect to products similar to the applicable Licensed Products, and having sufficient seniority and decision-making authority within the applicable Party to provide meaningful input and make decisions arising within the scope of such JMC's responsibilities. Each Party's JMC representatives may serve on one or more JMCs. Each JMC may change its size from time to time by agreement of the Parties, *provided* that each JMC will consist at all times of an equal number of representatives of each of Sage and Biogen. Each Party may replace its JMC representatives at any time upon written notice to the other Party. Each JMC may invite non-members to participate in the discussions and meetings of such JMC, *provided* that such participants have no voting authority at the meetings of such JMC and are bound under enforceable obligations of confidentiality and non-use no less protective of the Parties' Confidential Information than those set forth in this Agreement. Each JMC will be chaired by co-chairpersons designated by Sage and Biogen, respectively, whose responsibilities will include conducting meetings, including, when feasible, ensuring that objectives for each meeting are set and achieved. The respective applicable JMC will exist for so long as there are Manufacturing activities being conducted or planned to be conducted for at least one Licensed Product under this Agreement.

2.6.2 Specific Responsibilities of the JMC. Subject to any limitations under applicable Law, the respective applicable JMC will have the following responsibilities:

2.6.2.1 in consultation with the Finance Working Group, as part of the Manufacturing Plan, allocating responsibilities as between the Parties with respect to the right to [**], as described in Section 7.1 (Manufacturing Responsibilities);

2.6.2.2 preparing and approving Manufacturing Plans and amendments to then-current Manufacturing Plans for each Product Class and submit such amendments to the JSC to further review, discuss and determine whether to approve, as described in Section 7.2 (Manufacturing Plans);

2.6.2.3 serving as a forum for the Parties to exchange information regarding the progress of all Manufacturing activities, including status of inventory and anticipated shortages of Licensed Product for the Profit-Share Territory and anticipated shortages of Licensed Product for the Territory, as described in Section 7.7 (Reporting; Shortages); and

2.6.2.4 performing such other functions expressly allocated to the JMC in this Agreement or by the written agreement of the Parties.

2.6.3 *Meetings*. Each JMC will meet at least [**] times per Calendar Year, unless the Parties agree in writing to a different frequency, and otherwise as agreed by the Parties with respect to Manufacturing activities-specific matters. Each JMC may meet in person, by videoconference, or by teleconference, *provided* that at least [**] of each JMC per Calendar Year will be in person unless the

Parties otherwise mutually agree. In-person JMC meetings will be held at locations in Massachusetts alternately selected by Sage and by Biogen, or at any other location agreed by the members of the respective applicable JMC. Meetings of each JMC will be effective only if a quorum is present, which quorum will require the presence of at least one (1) representative of each Party. Each Party will bear the expense of its respective JMC members' participation in JMC meetings. No later than [**] prior to the first meeting of the respective applicable JMC in the 2020 stub-Calendar Year and in each Calendar Year thereafter while such JMC exists, the co-chairpersons for such JMC will prepare a communication plan setting forth a schedule of the dates of each meeting for such JMC for that Calendar Year (a "**JMC Communication Plan**"). No later than [**] prior to any meeting of the respective applicable JMC (or such shorter time period as the Parties may agree), the co-chairpersons of such JMC will work with the Alliance Managers to prepare and circulate an agenda for such meeting; *provided*, *however*, that additional topics may be included on such agenda, prior to the meeting, and the Party proposing an item will provide materials to the representatives of such JMC no later than [**] prior to the JMC meeting to support discussion. A JMC co-chairperson may also call a special meeting of its JMC (by videoconference, teleconference or in person) if such JMC co-chairperson reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, in which event such JMC co-chairperson will work with the Alliance Managers to provide the members of such JMC, promptly after the decision is made to hold such special JMC meeting, with an agenda for the meeting and materials reasonably adequate to enable an informed decision. The co-chairpersons of their respective applicable JMC will be responsible for preparing reasonably detailed written minutes of meetings of such JMC that reflect all decisions made and action items identified at such meetings within [**] after such meeting of such JMC, and endeavor to finalize such minutes within [**] after each meeting of such JMC.

2.6.4 *Decision-Making*. The JMC will endeavor to reach decisions by consensus, with each Party, through its representative members of the JMC, having one (1) vote. Approvals of each respective applicable JMC matter will require the unanimous agreement of the representatives. If a JMC cannot reach unanimous agreement on a matter that comes before it within [**] of the meeting at which such issue was raised and over which such JMC has oversight, then the Parties will refer such issue for resolution to the JSC.

2.7 Resolution of Committee Disputes.

2.7.1 *Referral to the JSC.* If any subcommittee or working group of the JDC, JCC or JMC cannot reach consensus on any matter within its decision-making authority within [**] after the meeting at which such failure to reach consensus occurred, then such matter will first be referred for attempted resolution to the applicable committee, *provided*, *however*, that any disputes arising out of the Joint Medical Affairs Subcommittee will be referred for attempted resolution directly to the JSC. If the JDC, JCC, JMC or any other committee or subcommittee of the JSC cannot reach consensus on any matter within its decision-making authority within [**] after the meeting at which such failure to reach consensus occurred, then the matter will be referred for attempted resolution to the JSC.

2.7.2 *Referral to Executive Officers and Executive Management*. If the JSC cannot reach a consensus decision under Section 2.7.1 (Referral to the JSC), then the matter will be referred to the Executive Officers within [**] of its determination under Section 2.7.1 (Referral to the JSC) that a consensus cannot be reached. If a matter is referred to the Executive Officers under this Section 2.7.2 (Referral to Executive Officers and Executive Management), then the JSC will submit in writing to their respective Executive Officers the respective positions of the Parties. Such Executive Officers will use good faith efforts to resolve such matter promptly, which good faith efforts will include at least [**] between such Executive Officers within [**] after such co-chairpersons' submission of their respective positions on such matter to them.

2.7.3 *Final Decision-Making Authority*. If the Executive Officers are unable to reach unanimous agreement on any such matter within [**] of the meeting between the Executive Officers, then no action will be taken as to the escalated matter until a joint decision can be made by the Parties, except that the following will apply:

2.7.3.1 except as set forth in Section 3.3.2 (Additional Indications Development), if the escalated matter relates to [**], then (a) [**] or (b) with respect to a [**];

2.7.3.2 if the escalated matter relates to Development of a Licensed Product for a new Indication, then the [**];

2.7.3.3 if the escalated matter relates to any Major Commercialization Activity, then [**];

2.7.3.4 if the escalated matter relates to the inventory holding and ship to strategy with respect to any Licensed Product in the Profit-Share Territory, then [**] will have final decision-making authority with respect to such matter; *provided* that [**];

2.7.3.5 the Development Lead Party for an activity will have final decision-making authority with respect to [**];

2.7.3.6 if the escalated matter relates to any Pricing Matter under a Joint Commercialization Plan as described in Section 5.7.1 (Pricing Matters), then the [**];

2.7.3.7 if the escalated matter relates to any dispute between the Parties with respect to the contents of any Biogen Publication, as described in Section 10.2.2 (Right to Review), then [**] will have final decision-making authority with respect to such matter;

2.7.3.8 if the escalated matter pertains to [**]; and

2.7.3.9 with respect to any matter set forth in this Section 2.7.3 (Final Decision-Making Authority) for which [**] has final decision-making authority, [**].

2.7.4 *Exercise of Decision-Making Rights*. No exercise of a Party's decision-making authority on any matters may, without the other Party's prior written consent, (a) unilaterally waive its own compliance with, modify or amend the terms or conditions of this Agreement, or (b) otherwise conflict with this Agreement.

2.7.5 *Good Faith*. In conducting themselves on Committees, and in exercising their rights under this Section 2.5 (Resolution of Committee Disputes), all representatives of both Parties will consider reasonably and in good faith all input received from the other Party and will use good faith efforts to reach unanimous agreement on all matters before them.

2.8 **General Committee Authority**. Each Committee has solely the powers expressly assigned to it in this Article 2 (Governance). No Committee will have any power to amend, modify, or waive the terms or conditions of this Agreement or compliance with the terms and conditions of this Agreement.

3. DEVELOPMENT

3.1 Diligence; Standards of Conduct.

3.1.1 *Profit-Share Territory*. Each of Sage and Biogen will use Commercially Reasonable Efforts to (a) Develop at least one Licensed 217 Product and at least one Licensed 324 Product in the Profit-Share Territory and [**], and (b) [**].

3.1.2 *Biogen Territory*. Biogen will use Commercially Reasonable Efforts to (a) Develop at least one Licensed 217 Product and at least one Licensed 324 Product in the Biogen Territory and (b) [**].

3.1.3 *General*. Each of Sage and Biogen will perform the Development activities it undertakes with respect to the Licensed Products in the Territory in a good scientific manner and in compliance in all material respects with applicable Law.

3.2 Joint Development Plans.

3.2.1 *General*. All Development of the Licensed 217 Products and the Licensed 324 Products for the Profit-Share Territory will be conducted pursuant to a development plan and budget for the applicable Product Class (each such plan, a "**Joint Development Plan**") that describes for each Product Class for the Profit-Share Territory: (a) [**]; (b) the anticipated timelines for such activities, including [**]; (c) the respective roles and responsibilities of each Party in connection with such activities, including which Party will have day-to-day operational responsibility with respect to such activities for the applicable Licensed Products in the Profit-Share Territory (for such activity, the "**Development Lead Party**"); and (d) the associated budget of the FTE Costs and Out-of-Pocket Costs anticipated to be incurred in the performance of the foregoing activities (each such included budget in a Joint Development Plan, a "**Joint Development Budget**") and, starting with the annual update to the Joint Development Plan for 2021, a [**], high-level budget with respect to the performance of activities in such Joint Development Plan (each such budget, a "**Long Term Joint Development Budget**"). Each Party will be allocated meaningful responsibility for Development activities under each Joint Development Plan, consistent with a 50:50 collaboration for the Licensed Products for the Profit-Share Territory. In the event of any inconsistency between a Joint Development Plan and this Agreement, the terms of this Agreement will prevail. The initial Joint Development Plan for the Licensed 217 Products and the initial Joint Development Plan for the Licensed 324 Products are attached hereto, respectively, as Schedule 3.2.1 (Joint Development Plans); *provided*, *however*, that for each such initial Joint Development Plans, the corresponding Joint Development Budgets will be (i) agreed between the Parties within [**] after the Effective Date and (ii) unless agreed otherwise by the JSC, consistent with the applicable initial Joint Development Plan and Sage's current and anticipated spend with respect to the activities included in such initial Joint Development Plan.

3.2.2 *Amendments to Joint Development Plans*. On an annual basis, (a) no later than [**] of each Calendar Year, or more often as the Parties deem appropriate, the JDC will prepare amendments to each then-current Joint Development Plan (including the corresponding Joint Development Budget) for the Licensed 217 Products and the Licensed 324 Products, and submit such each such amendment to the JSC to review, discuss and determine whether to approve by no later than [**]of each Calendar Year, and (b) no later than [**] of each Calendar Year, or more often as the Parties deem appropriate, the JDC will prepare amendments to each then-current Long Term Joint Development Budget corresponding to each Joint Development Plan and submit each such amendment to the JSC to review, discuss and determine whether to approve by no later than [**] of each Calendar Year. Each such amended Joint Development Plan will specify the items described in Section 3.2.1 (Joint Development Plans;

General) for each Product Class for the next Calendar Year (and additional periods as reasonably determined by the Parties) and the Joint Development Budget included therein will appropriately itemize the FTE Costs and Out-of-Pocket Costs for the activities undertaken pursuant to each Joint Development Plan. Such updated and amended Joint Development Plan will reflect any changes, re-prioritization or termination of Clinical Studies or Nonclinical Studies within, reallocation of resources with respect to, or additions to (including reprioritization of Indications, additions of Indications for Development and Regulatory Approval, in each case, not included currently therein) the then-current corresponding Joint Development Plan. Once approved by the JSC, an amended annual Joint Development Plan (including its corresponding Joint Development Budget and Long Term Joint Development Budget) will become effective for the applicable period on the date approved by the JSC (or such other date as the JSC will specify). Any JSC-approved amended Joint Development Plan (including its corresponding Joint Development Budget and Long Term Joint Development Budget) will supersede the previous Joint Development Plan (including its corresponding Joint Development Budget and Long Term Joint Development Budget) for the applicable period.

3.3 Operational Responsibilities for Development; Additional Development.

3.3.1 *Operational Responsibilities for Development*.

3.3.1.1 *Profit-Share Territory.* Unless the Parties agree in writing upon an alternate allocation of responsibility, for the Profit-Share Territory, (a) Sage will be the Development Lead Party with respect to conducting and completing the Ongoing 217 Studies and the KINETIC Study, (b) [**], and (c) Sage and Biogen will have joint responsibility for all other Development activities for the Licensed Products, with each Party serving as the Development Lead Party as designated in the applicable Joint Development Plan, as the same may be amended and expanded in accordance with Section 3.2.2 (Amendments to Joint Development Plans). As part of the preparation of the initial Joint Development Plans and any amendments thereto as described in Section 3.2 (Joint Development Plans), the JDC will identify any changes to the Major Development Activities in such Joint Development Plan and assign a Development Lead Party that will be responsible for each Major Development Activity. In the event that a Development Lead Party is unable to perform any of its material responsibilities in accordance with the applicable Joint Development Plan (including the applicable timeline set forth therein for the performance of such activities) and fails to cure any such non-performance within [**] after receipt of written notice from the non-Development Lead Party regarding such non-performance, then the other Party will have the right to become the Development Lead Party with respect to the applicable non-performed responsibilities for purposes of this Agreement, and any FTE Costs and Out-of-Pocket Costs that such other Party incurs in connection with its performance of such responsibilities (or the assumption thereof) will be included as Joint Development Costs. [**].

3.3.1.2 *Biogen Territory*. For the Biogen Territory, Biogen will have sole control over and decision-making authority with respect to all Development of the Licensed Products solely for the Biogen Territory.

3.3.2 *Additional Indications Development*. As contemplated under Section 3.2.2 (Amendments to Joint Development Plans), each Party may propose (the "**Proposing Party**") for addition under the applicable then-current Joint Development Plan (and corresponding Joint Development Budget) Development of a Licensed Product for the Profit-Share Territory in an Indication not included in such then-current Joint Development Plan ("**Additional Indications Development**"). In such a case, the Proposing Party will prepare a proposed amendment to the applicable then-current Joint Development Plan (and corresponding Joint Development Budget) for the applicable Licensed Product setting forth the additional Indication proposed to be included for Development for the Profit-Share Territory, the proposed

Development activities to be conducted in furtherance of such Indication, the proposed Development Lead Party designations as between the Parties for the performance thereof and the proposed budget of FTE Costs and Out-of-Pocket Costs associated with the performance of such additional Development activities (each, an "**Additional Development Proposal**"). The Proposing Party will submit each Additional Development Proposal to the JDC to review and discuss and then the JDC will submit each Additional Development Proposal (as may be revised by the JDC) to the JSC to review, discuss and determine whether to approve in accordance with Section 2.3.2.1 (Specific Responsibilities of the JDC). As soon as reasonably practicable, but in no event more than [**] following such time as the JSC approves an Additional Development Proposal, the Parties, through the JDC, will prepare an amendment to the applicable Joint Development Plan to contemplate the Development of such Additional Indications Development that is consistent with such approved Additional Development Proposal, and submit such amendment to the JSC to review, discuss and determine whether to approve. If the JSC cannot reach consensus on approving any aspect of an Additional Development Proposal or the update to the Joint Development Plan related thereto (*e.g.*, the additional Indication proposed to be included for Development and Regulatory Approval, [**].

3.4 Development Costs.

3.4.1 *Profit-Share Territory*. Subject to Section 3.3.2 (Additional Indications Development) and Section 9.4 (Sage Opt Out), Sage will be responsible for fifty percent (50%) and Biogen will be responsible for fifty percent (50%) of all Joint Development Costs. The Parties will reconcile such Joint Development Costs they have incurred to reflect the foregoing allocation of Joint Development Costs according to the procedures in Section 9.3.1 (Reconciliation/Reimbursement Prior to First Commercial Sale) or Section 9.3.3 (Profit Sharing Following First Commercial Sale), as applicable.

3.4.2 *Biogen Territory*. Biogen will be responsible for one hundred percent (100%) of all costs and expenses incurred by or on behalf of Biogen in the performance of the Development of the Licensed Products solely for the Biogen Territory.

3.5 Development Reports. For Development activities conducted for the Profit-Share Territory, each Party will provide to the JDC: (a) no later than [**] after the same becomes available, any material information and data arising from the Development of Licensed Products for the Profit-Share Territory by such Party, including [**] and (b) at least [**] in advance of each regularly scheduled meeting of the JDC, any other relevant information and data arising from the performance of Development activities by such Party for the Licensed Products for the Profit-Share Territory since the last such meeting to the extent not previously disclosed in connection with day-to-day interactions between the Parties. In addition, at the first JDC meeting in the following Calendar Year, each Party will provide an annual review for the Calendar Year-ended of results versus goals of Development activities for the Licensed Products for the Profit-Share Territory (as such goals are set forth in the applicable Joint Development Plans). Biogen will provide, (A) promptly after the same become available, [**], (B) [**], and (C) [**].

3.6 Clinical Study Reporting. Each Party agrees that each Clinical Study conducted for a Licensed Product pursuant to this Agreement that is required to be posted pursuant to applicable Law or applicable industry codes in the Territory, and all results of any such Clinical Study, as the case may be, for a Licensed Product, in the Territory, will be so posted. All information posted pursuant to this Section 3.6 (Clinical Study Reporting) will be subject to prior review pursuant to Section 10.2.1 (Publication) as if such posting were a publication or presentation.

3.7 Joint Program Activities Records. Each Party will maintain complete and accurate records (in the form of technical notebooks or electronic files where appropriate) of all Development, Manufacturing, Medical Affairs Activities and Commercialization activities conducted by or on behalf of it under this Agreement and all information, data and results resulting from such activities for the Licensed

Products for the Profit-Share Territory. Such records will fully and properly reflect all work done and results achieved in the performance of such Development, Manufacturing, Medical Affairs Activities or Commercialization activities, in each case, in sufficient detail and in good scientific manner appropriate for patent and regulatory purposes. Each Party will provide copies of such records (including in electronic format if maintained in such format) to the other Party to the extent related to the Development of Licensed Products for the Profit-Share Territory on a [**] basis (or as more frequently as may be reasonably requested by such other Party) to enable such other Party to perform its obligations or exercise its rights under this Agreement.

3.8 Technology and Materials Transfer. Sage will provide to Biogen copies of all Sage Licensed Know-How that is necessary, has been used prior to the Effective Date, or [**] is reasonably useful, in each case, for the performance of Development, Manufacturing, Medical Affairs Activities or Commercialization activities for Licensed Products for the Profit-Share Territory or the Biogen Territory, as applicable, no later than [**] after the Effective Date. Thereafter, Sage will provide to Biogen copies of all Sage Licensed Know-How that is made, conceived, discovered or otherwise generated following the Effective Date or such initial transfer of Sage Licensed Know-How and that is licensed to Biogen pursuant to Section 8.1.1.1 (License Grant to Biogen) to continue to enable Biogen to perform Development, Manufacturing, Medical Affairs Activities or Commercialization activities for Licensed Products for the Profit-Share Territory or the Biogen Territory, as applicable. [**]. In addition to providing copies of the Sage Licensed Know-How and the Biogen Licensed Know-How, as applicable, in accordance with this Section 3.8 (Technology and Materials), Sage and Biogen, respectively, will make its personnel reasonably available to the other Party so as to enable such Party to practice under, respectively, the Sage Licensed Technology, in case of Biogen, and the Biogen Licensed Technology, in case of Sage, in connection with its performance of the Development, Manufacture, Medical Affairs Activities or Commercialization activities for Licensed Products.

3.9 Development Subcontracts. Subject to this Section 3.9 (Development Subcontracts), each Party may perform any of its Development obligations under this Agreement with respect to any Licensed Product in the Territory through one or more Subcontractors, [**]. Prior to engaging any Subcontractor that is not a [**] to perform any Development obligation relating to the conduct of [**] assigned to such Party under a Joint Development Plan, (a) [**], and (b) if [**]. If the JDC approves the engagement of such [**] to perform the activities set forth in the applicable proposal, then the applicable Party may engage such [**] to perform such activities, and if the JDC does not approve the engagement of such [**] to perform the activities set forth in the applicable proposal, then the proposing Party may not engage such [**] to perform the activities within the scope of the proposal. Any subcontract permitted under this Section 3.9 (Development Subcontracts) must be consistent with the terms of this Agreement, including that the Subcontractor undertakes in writing commercially reasonable obligations of confidentiality and non-use regarding Confidential Information that are substantially the same as those undertaken by the Parties with respect to Confidential Information pursuant to Article 10 (Confidentiality and Publication) hereof, and each Party will use reasonable efforts to require that the Subcontractor undertakes in writing to assign or exclusively license back (with the right to sublicense) to such Party all intellectual property with respect to the Licensed Products developed in the course of performing any such work. Without limitation of the foregoing, during the Term, each Party will keep the other Party reasonably informed with respect to any Development activities for the Licensed Products related to [**] that such Party intends to subcontract for the Profit-Share Territory. However, in respect of any and all subcontracts entered into by either Party pursuant to this Section 3.9 (Development Subcontracts), subject to Section 12.4 (Certain Third Party Claims Related to Licensed Products in the Profit-Share Territory) and Section 3.4 (Development Costs), such Party will remain responsible for the work allocated to, and payment to, such Subcontractors to the same extent it would if it had done such work itself and compliance by its Subcontractors with the applicable provisions of this Agreement.

3.10 Licensed [**] Product Development

3.10.1 Licensed [**] Product Development. Sage may[**]. Within [**] after the [**] for the [**] become available to Sage, if any, Sage will (a) notify the JSC in writing of the completion of the [**] and (b) provide the [**] to the JSC.

3.10.2 [**] Substitution. At any time during the period commencing as of the Effective Date and ending upon the Substitution Termination Date, the JDC may review, discuss and determine whether to approve the substitution of the Licensed [**] Product for [**] (the "**[**] Substitution**").

3.10.3 Effects of [**] Substitution. If the JDC determines to make the [**] Substitution, then the Parties will, for a period of [**] following the date of the [**] Substitution, negotiate the [**] with respect to replacing the Licensed [**] Products for [**]. If the Parties agree on such [**] and enter into a new agreement or an amendment of this Agreement within such [**] period (the date of such agreement, the "**Licensed [**] Products Substitution Date**"), then:

[**].

3.10.4 Failure of [**] Substitution or Substitution Termination Date. In the event that (a) the JDC agrees to a [**] Substitution, but the Parties are unable to agree on [**] with respect to the Licensed [**] Products as described in Section 3.10.3 (Effects of [**] Substitution) or (b) the Substitution Termination Date occurs without the Licensed [**] Products Substitution Date having first occurred, then, in each case ((a) or (b)), (i) each Party's rights and obligations under this Agreement with respect to all Licensed [**] Products will terminate, and (ii) Sage will be free to Develop, Manufacture, perform Medical Affairs Activities with respect to and Commercialize, alone or with one or more Third Parties, any and all Licensed [**] Products anywhere in the world without any further obligation to Biogen.

4. MEDICAL AFFAIRS ACTIVITIES

4.1 Diligence; Standards of Conduct. Each of Biogen and Sage will use Commercially Reasonable Efforts to carry out the tasks for which it is responsible for under the applicable corresponding Joint Medical Affairs Plan in accordance with the applicable timelines set forth in such plan.

4.2 Joint Medical Affairs Plans.

4.2.1 *General*. All Medical Affairs Activities to be conducted for the Licensed 217 Products and the Licensed 324 Products in the Profit-Share Territory will be conducted pursuant to separate written plans and budgets for each Product Class (each such plan, a "**Joint Medical Affairs Plan**") that describes for each Product Class for the Profit-Share Territory: (a) the pre-launch, launch and subsequent Medical Affairs Activities to be conducted for such Licensed Products in the Profit-Share Territory (including anticipated Phase IV Optional Studies; when applicable, investigator initiated and scientific research agreements and post-hoc analyses of pivotal studies; the publications strategy and planning and medical content creation, including internal and external education); real-world evidence strategy and data generation planning; Key Medical Expert (KME) engagement through congress, face-to-face and digital, including the development of a KME engagement plan; advisory boards based on appropriate needs assessment; building and training of medical science liaisons and the engagement of medical science liaisons with providers; external disease-state awareness activities; and the key tactics and strategies for implementing such activities, (b) the development of a Medical Information call center and standard responses to ensure consistent communication and single point of contact for product-related customer service for health care providers and triage of product complaints, (c) the respective roles and responsibilities of each Party in connection with such activities, including which Party will have day-to-

day operational responsibility with respect to each such activity for the applicable Licensed Product in the Profit-Share Territory (for such activity, the "**Medical Affairs Lead Party**"), and (d) the associated budget of the FTE Costs and Out-of-Pocket Costs anticipated to be incurred in the performance of the foregoing activities (each such included budget in a Joint Medical Affairs Plan, a "**Joint Medical Affairs Budget**") and a [**], high-level budget with respect to the performance of activities under such Joint Medical Affairs Plan (each such budget, a "**Long Term Joint Medical Affairs Budget**"). Each Party will be allocated meaningful responsibility for Medical Affairs Activities under each Joint Medical Affairs Plan, consistent with a 50:50 collaboration. In the event of any inconsistency between a Joint Medical Affairs Plan and this Agreement, the terms of this Agreement will prevail. The Parties will prepare initial Joint Medical Affairs Plans (including the corresponding Joint Medical Affairs Budgets) (a) for the Licensed 217 Products, no later than [**] prior to the anticipated completion date of the WATERFALL Study and (b) for the Licensed 324 Products, no later than [**] prior to the anticipated completion date of the first Phase 3 Study for the first Licensed 324 Product, and (in each case (i) and (ii)) submit such initial Joint Medical Affairs Plans to the JSC to review, discuss, and determine whether to approve.

4.2.2 *Amendments to Joint Medical Affairs Plans*. On an annual basis, (a) no later than [**] of each Calendar Year, or more often as the Parties deem appropriate, the Joint Medical Affairs Subcommittee will prepare amendments to each then-current Joint Medical Affairs Plan, including the corresponding Joint Medical Affairs Budget, for the Licensed 217 Products and the Licensed 324 Products, and submit each such amendment to the JSC to review, discuss and determine whether to approve by no later than [**] of each Calendar Year and (b) no later than [**] of each Calendar Year, or more often as the Parties deem appropriate, the Joint Medical Affairs Subcommittee will prepare amendments to each then-current Long Term Joint Medical Affairs Budget corresponding to each Joint Medical Affairs Plan and submit each such amendment to the JSC to review, discuss and determine whether to approve by no later than [**] of each Calendar Year. Each such amended Joint Medical Affairs Plan will specify the items described in Section 4.2.1 (General) for each Product Class for the next Calendar Year (and additional periods as reasonably determined by the Parties) and the Joint Medical Affairs Budget included therein will appropriately itemize the FTE Costs and Out-of-Pocket Costs for the activities undertaken pursuant to such Joint Medical Affairs Plan. Such updated and amended Joint Medical Affairs Plan will reflect any changes, re-prioritization or termination of Medical Affairs Activities within, or additions to, the then-current corresponding Joint Medical Affairs Plan. Once approved by the JSC, an amended annual Joint Medical Affairs Plan (including its corresponding Joint Medical Affairs Budget and Long Term Joint Medical Affairs Budget) will become effective for the applicable period on the date approved by the JSC (or such other date as the JSC will specify). Any JSC-approved amended Joint Medical Affairs Plan (including its corresponding Joint Medical Affairs Budget and Long Term Joint Medical Affairs Budget) will supersede the previous Joint Medical Affairs Plan (including its corresponding Joint Medical Affairs Budget and Long Term Joint Medical Affairs Budget) for the applicable period.

4.3 **Operational Responsibilities for Medical Affairs Activities**.

4.3.1 *Operational Responsibilities for Medical Affairs Activities*.

4.3.1.1 *Profit-Share Territory*. Unless the Parties agree in writing upon an alternate allocation of responsibility, (a) for the Profit-Share Territory, the Parties will have joint responsibility for all Medical Affairs Activities in support of the Licensed Products, with each Party serving as the Medical Affairs Lead Party as designated in the applicable Joint Medical Affairs Plan, as the same may be amended and expanded in accordance with Section 4.2.2 (Amendments to Joint Medical Affairs Plan). As part of the preparation of the initial Joint Medical Affairs Plans and any amendments thereto as described in Section 4.2 (Joint Medical Affairs Plans), the Joint Medical Affairs Subcommittee will identify any changes to the Major Medical Affairs Activities in such Joint Medical Affairs Plan and assign a Medical Affairs Lead Party that will be responsible

for each Major Medical Affairs Activity. In the event that a Medical Affairs Lead Party is unable to perform any of its material responsibilities in accordance with the applicable Joint Medical Affairs Plan (including the applicable timeline set forth therein for the performance of such activities) and fails to cure any such non-performance within [**] after receipt of written notice from the non-Medical Affairs Lead Party regarding such non-performance, then the other Party will have the right to become the Medical Affairs Lead Party with respect to the non-performed activities for purposes of this Agreement, and any FTE Costs and Out-of-Pocket Costs that such other Party incurs in connection with its performance of such activities (or the assumption thereof) will be included as Joint Medical Affairs Costs. The Parties will resolve any dispute regarding whether any such responsibility that a Medical Affairs Lead Party is does not perform is "material", as described in the foregoing sentence, in accordance with Section 15.3.5 (Expert Arbitration).

4.3.1.2 *Biogen Territory*. For the Biogen Territory, Biogen will have sole control over and decision-making authority with respect to the performance of Medical Affairs Activities in support of the Licensed Products.

4.4 Medical Affairs Costs.

4.4.1 *Profit-Share Territory*. Subject to Section 9.4 (Sage Opt-Out), Sage will be responsible for fifty percent (50%) and Biogen will be responsible for fifty percent (50%) of all Joint Medical Affairs Costs in support of the Licensed Products for the Profit-Share Territory. The Parties will reconcile such Joint Medical Affairs Costs they have incurred to reflect the foregoing applicable allocation of Joint Medical Affairs Costs according to the procedures in Section 9.3.1 (Reconciliation/Reimbursement Prior to First Commercial Sale) or Section 9.3.3 (Profit Sharing Commercialization), as applicable.

4.4.2 *Biogen Territory*. Biogen will be responsible for one hundred percent (100%) of all costs and expenses incurred by or on behalf of Biogen for Medical Affairs Activities in support of the Licensed Products solely for the Biogen Territory.

4.5 Medical Affairs Reports. For Medical Affairs Activities conducted for the Profit-Share Territory, each Party will provide to the JSC, (a) within [**] after the same becoming available, any material information and data arising from the Medical Affairs Activities with respect to the Licensed Products for the Profit-Share Territory by such Party, and (b) at least [**] in advance of each regularly scheduled meeting of the Joint Medical Affairs Subcommittee, all other relevant information and data arising from Medical Affairs Activities for the Licensed Products for the Profit-Share Territory conducted by or on behalf of such Party since the last such meeting to the extent not previously disclosed in connection with day-to-day interactions between the Parties. In addition, at the first JSC meeting in the following Calendar Year, each Party will provide an annual review for the Calendar Year-ended of results versus goals of Medical Affairs Activities for the Licensed Products for the Profit-Share Territory (as such goals are set forth in the corresponding Joint Medical Affairs Plans). Biogen will provide (i) to the JSC [**], and (ii) [**].

5. COMMERCIALIZATION

5.1 Diligence; Standards of Conduct.

5.1.1 *Profit-Share Territory*. Each of Sage and Biogen will use Commercially Reasonable Efforts to (a) Commercialize the Licensed 217 Products and the Licensed 324 Products in the Profit-Share Territory after Regulatory Approval and, if applicable, Pricing and Reimbursement Approval therefor has been obtained and (b) [**].

5.1.2 *Biogen Territory*. Biogen will use Commercially Reasonable Efforts to (a) obtain Pricing and Reimbursement Approval for a Licensed Product, where applicable, in each of the Major European Countries in which Regulatory Approval therefor has been obtained, and (b) following receipt of Pricing and Reimbursement Approval for a Licensed Product in any such Major European Country, where applicable, Commercialize such Licensed Product in each such country.

5.2 Joint Commercialization Plans.

5.2.1 *General*.

5.2.1.1 As further described in this Section 5.2 (Joint Commercialization Plans), the tactics and strategy for the Commercialization of the Licensed 217 Products and the Licensed 324 Products for the Profit-Share Territory will be set forth in and conducted pursuant to a commercialization plan and budget for each Product Class (each such plan, a "**Joint Commercialization Plan**") that describes for each Product Class in the Profit-Share Territory: (a) the pre-launch, launch and subsequent Commercialization activities of the applicable Licensed Products in the Profit-Share Territory, including the field force size, structure, allocation and deployment; patient support size and structure; product positioning; market access plans; anticipated activities relating to messaging, branding, Pricing Matters, advertising, planning, marketing, and training; managed care contracting and account management and the plan for negotiation of managed care arrangements; Distribution Matters; CMC Activities and the quantities of Licensed Product to be supplied to the Parties for the Profit-Share Territory and the estimated delivery date for such Licensed Product, which quantities will be consistent with the forecast provided by the applicable Party in accordance with a forecasting schedule to be agreed by the Parties in an applicable Supply Agreement; and the key tactics and strategies for implementing the foregoing activities; (b) subject to Section 5.4 (Operational Responsibilities for Commercialization), the respective roles and responsibilities of each Party in connection with the performance of such activities, including which Party will have day-to-day operational responsibility with respect to such activities for the applicable Licensed Product in the Profit-Share Territory (for such activity, the "**Commercialization Lead Party**"); and (c) the associated budget of the FTE Costs and Out-of-Pocket Costs anticipated to be incurred in the performance of the foregoing activities (each such included budget, a "**Joint Commercialization Budget**") and [**], high-level budget with respect to the performance of activities under such Joint Commercialization Plan (each such budget, a "**Long Term Joint Commercialization Budget**"). In the event of any inconsistency between a Joint Commercialization Plan and this Agreement, the terms of this Agreement will prevail.

5.2.1.2 (a) No later than [**] following the Effective Date for the Licensed 217 Products and (b) no later than [**] following Initiation of the [**] for the first Licensed 324 Product, in each case, in the Profit-Share Territory, the JCC will prepare the applicable initial Joint Commercialization Plan therefor (including the corresponding initial Joint Commercialization Budget and Long Term Joint Commercialization Budget) and submit such initial Joint Commercialization Plan(s) to the JSC to review, discuss and determine whether to approve.

5.2.2 *Amendments to Joint Commercialization Plans*. On an annual basis, (a) no later than [**] of each Calendar, or more often as the Parties deem appropriate, the JCC will prepare amendments to each then-current Joint Commercialization Plan, including the corresponding Joint Commercialization Budget, for the Licensed 217 Products and the Licensed 324 Products, and submit each such amendment to the JSC to review, discuss and determine whether to approve by no later [**] of each Calendar Year and (b) no later than [**] of each Calendar Year, or more often as the Parties deem appropriate, the JCC will prepare amendments to each then-current Long Term Joint Commercialization Budget corresponding to

each Joint Commercialization Plan and submit each such amendment to the JSC to review, discuss and determine whether to approve by no later than [**] of each Calendar Year. Each such amended Joint Commercialization Plan will specify the items described in Section 5.2.1.1 (General) for each Product Class for the next Calendar Year (and additional periods as reasonably determined by the Parties) and the Joint Commercialization Budget included therein will appropriately itemize FTE Costs and Out-of-Pocket Costs for the activities undertaken pursuant to such Joint Commercialization Plan. Once approved by the JSC, an amended annual Joint Commercialization Plan (including its corresponding Joint Commercialization Budget and Long Term Joint Commercialization Budget) will become effective for the applicable period on the date approved by the JSC (or such other date as the JSC will specify). Any JSC-approved amended Joint Commercialization Plan (including its corresponding Joint Commercialization Budget and Long Term Joint Commercialization Budget) will supersede the previous Joint Commercialization Plan (including its corresponding Joint Commercialization Budget and Long Term Joint Commercialization Budget) for the applicable period.

5.3 **Commercialization Principles**. With respect to Commercialization activities for Licensed Products for the Profit-Share Territory, the Parties hereby acknowledge and agree that: (a) each Party will be allocated meaningful responsibility for Commercialization activities under each Joint Commercialization Plan, consistent with a 50:50 collaboration and Sage's intent to build experience and expertise with respect to Commercialization activities, (b) [**], and (c) [**]. The Parties will perform all Commercialization activities under any Joint Commercialization Plan consistent with and in furtherance of the principles set forth in this Section 5.3 (Commercialization Principles).

5.4 **Operational Responsibilities for Commercialization**.

5.4.1 *Profit-Share Territory*. Unless the Parties agree in writing upon an alternate allocation of responsibility, for the Profit-Share Territory: (a) Sage will be the Commercialization Lead Party in the Profit-Share Territory with respect to Distribution Matters for the Licensed 324 Product and Biogen will be the Commercialization Lead Party in the Profit-Share Territory with respect to Distribution Matters for the Licensed 217 Product, (b) the JMC, in consultation with the Finance Working Group, will determine the allocation of responsibility with respect to [**] for any Licensed Product in the Profit-Share Territory, and (c) the Parties will have joint responsibility for Commercializing the Licensed Products after Regulatory Approval therefor has been obtained, with each Party serving as the Commercialization Lead Party as designated in the applicable Joint Commercialization Plan, as the same may be amended and expanded in accordance with Section 5.2.2 (Amendments to Joint Commercialization Plans). As part of the preparation of the initial Joint Commercialization Plans and any amendments thereto as described in Section 5.2 (Joint Commercialization Plans), the JCC will identify any changes to the Major Commercialization Activities in such Joint Commercialization Plan and assign a Commercialization Lead Party that will be responsible for such Major Commercialization Activity. In the event that a Commercialization Lead Party is unable to perform any of its material responsibilities in accordance with the applicable Joint Commercialization Plan (including the applicable timeline set forth therein for the performance of such activities) and fails to cure any such non-performance within [**] after receipt of written notice from the non-Commercialization Lead Party regarding such non-performance, then the other Party will have the right to become the Commercialization Lead Party with respect to the non-performed activities for purposes of this Agreement, and any FTE Costs and Out-of-Pocket Costs that such other Party incurs in connection with its performance of such activities (or the assumption thereof) will be included as Joint Commercialization Costs. The Parties will resolve any dispute regarding whether any such responsibility that a Commercialization Lead Party does not perform is "material", as described in the foregoing sentence, in accordance with Section 15.3.5 (Expert Arbitration).

5.4.2 *Biogen Territory*. For the Biogen Territory, Biogen will have sole control over and decision-making authority with respect to all Commercialization activities for the Licensed Products.

5.5 Commercialization Costs.

5.5.1 *Profit-Share Territory*. Subject to Section 9.4 (Sage Opt-Out), Sage will be responsible for fifty percent (50%) and Biogen will be responsible for fifty percent (50%) of all Joint Commercialization Costs. The Parties will reconcile such Joint Commercialization Costs they have incurred to reflect the foregoing applicable allocation of Joint Commercialization Costs according to the procedures in Section 9.3.1 (Reconciliation/Reimbursement Prior to First Commercial Sale) or Section 9.3.3 (Profit Sharing Following First Commercial Sale), as applicable.

5.5.2 *Biogen Territory*. Biogen will be responsible for one hundred percent (100%) of all costs and expenses incurred by or on behalf of Biogen for the Commercialization of the Licensed Products solely for the Biogen Territory.

5.6 Commercialization Reports. For Commercialization activities conducted for the Profit-Share Territory, each Party will provide (a) within [**] of the same becoming available, any material information and data arising from the Commercialization activities for the Licensed Products in the Profit-Share Territory by such Party, and (b) at least [**] in advance of each regularly scheduled meeting of the Joint Commercialization Committee, all other relevant information and data arising from Commercialization activities for the Licensed Products for the Profit-Share Territory conducted by or on behalf of such Party since the last such meeting to the extent not previously disclosed in connection with day-to-day interactions between the Parties. In addition, at the first JCC meeting in the following Calendar Year, each Party will provide an annual review for the Calendar Year-ended of results versus goals of Commercialization activities for the Licensed Products for the Profit-Share Territory (as such goals are set forth in the corresponding Joint Commercialization Plans) and Biogen will provide (i) to the JCC [**], except with respect to [**], which will be discussed as forth in Section [**], and (ii) [**].

5.7 Pricing Matters; Distribution.

5.7.1 *Pricing Matters*.

5.7.1.1 In conjunction with [**]. The Parties agree that [**].

5.7.2 Biogen will have sole control and decision-making authority with respect to Pricing Matters for Licensed Products in the Biogen Territory; *[**]*.

5.7.3 *Distribution in the Profit-Share Territory*. Subject to this Section 5.7.3 (Distribution in the Profit-Share Territory), with respect to Distribution Matters in the Profit-Share Territory, Biogen will be the Commercialization Lead Party for the Licensed 217 Products and Sage will be the Commercialization Lead Party for the Licensed 324 Products, and in each case, the applicable Commercialization Lead Party will be responsible for such Distribution Matters for the applicable Licensed Products, including (a) [**], (b) [**], and (c) [**] (as may be amended in accordance with this Agreement, the "**Distribution Plan**"), the other aspects of the applicable Joint Commercialization Plan and the decisions made by the JSC with respect to Pricing Matters. No later than (i) [**] following the Effective Date for the Licensed 217 Products and (b) [**] following Initiation of the first [**] for the first Licensed 324 Product, the JCC will prepare the applicable initial Distribution Plan(s) therefor and submit such initial Distribution Plan(s) to the JSC to review, discuss and determine whether to approve. Each Party will be solely responsible for [**] percent ([**]%) of all costs and expenses (including Distribution Costs) incurred in connection with building and making operational any systems and infrastructure required to perform its responsibilities under the Distribution Plan, including [**]. To the extent consistent with the Distribution Plan and the applicable Joint Commercialization Plan, any Distribution Costs incurred after the applicable Party has built and made operational such systems and infrastructure will be included as Joint

Commercialization Costs. Each Party will provide reasonable assistance to the other Party in connection with such other Party's performance of activities in accordance with the Distribution Plan. In the event that a Commercialization Lead Party is unable to perform any of its material responsibilities in accordance with the Distribution Plan (including the applicable timeline set forth therein for the performance of such activities) and fails to cure any such deficiency within [**] after receipt of written notice from the non-Commercialization Lead Party regarding such deficiency, then the other Party will have the right to become the Commercialization Lead Party with respect to the affected responsibilities for purposes of this Agreement, and any FTE Costs and Out-of-Pocket Costs that such other Party incurs in connection with its performance of such responsibilities (or the assumption thereof) will be included as Joint Commercialization Costs. The Parties will resolve any dispute regarding whether any such responsibility that a Commercialization Lead Party does not perform is "material", as described in the foregoing sentence, in accordance with Section 15.3.5 (Expert Arbitration).

5.8 Uniform Training. For training purposes, the Parties will treat the Sage and Biogen field-based representatives, including field-facing medical personnel, medical science liaisons, medical value liaisons, medical directors and patient support personnel, in each case, in the Profit-Share Territory as a combined field force within the applicable function and will cooperate to provide the foregoing Sage and Biogen personnel in the Profit-Share Territory with the same training, support, and assistance.

5.9 Detail Costs; Authority over Sales Forces. Each Party may include the applicable Detail Costs determined using the rate as agreed by the JSC as Joint Commercialization Costs in accordance with this Agreement, but otherwise each Party will be responsible for all costs and expenses incurred in connection with its respective Sales Representatives performing Details in the Profit-Share Territory, including salaries, incentive compensation, travel expenses and other expenses, providing benefits, deducting federal, state and local payroll taxes, Federal Insurance Contribution Act taxes, unemployment insurance taxes, and any similar taxes and paying workers' compensation premiums, unemployment insurance contributions and any other payments required by applicable Law to be made on behalf of employees. Nothing in this Agreement will be construed to conclude that any of Biogen's Sales Representatives or any other agents or employees of Biogen in the Profit-Share Territory are agents or employees of Sage or subject to Sage's direction and control. Biogen will have sole authority over the terms and conditions of employment of Biogen's Sales Representatives in the Profit-Share Territory, including their selection, management, compensation (including incentive plans) and discharge. Nothing in this Agreement will be construed to conclude that any of Sage's Sales Representatives or any other agents or employees of Sage in the Profit-Share Territory are agents or employees of Biogen or subject to Biogen's direction and control. Sage will have sole authority over the terms and conditions of employment of Sage's Sales Representatives in the Profit-Share Territory, including their selection, management compensation (including incentive plans) and discharge.

5.10 Joint Commercialization Costs Allocation. Subject to this Section 5.10 (Joint Commercialization Costs Allocation) and to the extent consistent with the applicable Joint Commercialization Budget, Sage may use certain Commercialization resources ("Shared Resources") that are engaged both in the performance of activities under a Joint Commercialization Plan and in the performance of similar Commercialization activities for the benefit of [**]. Subject to this Section 5.10 (Joint Commercialization Costs Allocation) and to the extent consistent with the applicable Joint Commercialization Budget, Biogen may use Shared Resources that are engaged both in the performance of activities under a Joint Commercialization Plan and in the performance of similar Commercialization activities for the benefit of [**]. Prior to engaging any such Shared Resources with respect to [**]. For each Shared Resource that also engages in Commercialization activities for [**] during the relevant Calendar Quarter, the cost of such Shared Resource (for purposes of calculating Joint Commercialization Costs) will be [**]. For the purposes of calculating the FTE Costs of each Party's Shared Resource performing Commercialization activities in the Profit-Share Territory under the applicable Joint

Commercialization Plan, the FTEs of any contractor sales force will be reported in the same FTE category as any employee sales force and the FTE Rate for such contractor sales force FTEs will be calculated in accordance with Section 1.1.101 (FTE Costs). Notwithstanding any provision to the contrary in this Agreement, neither Party may share Commercialization resources between [**] and [**] in a manner that would result [**].

5.11 Advertising and Promotional Materials in Profit-Share Territory.

5.11.1 *Branding*. From time to time during the Term, the Parties will jointly develop via the JCC (and thereafter modify and update) and submit to the JSC to review, discuss and determine whether to approve a branding strategy (including positioning, messages, timing, logo, colors, and other visual branding elements) for each Product Class in the Profit-Share Territory (a "**Branding Strategy**"). The JCC will allocate between the Parties responsibility for preparing the initial draft of the various sections of the Branding Strategy for each Product Class.

5.11.2 *Promotional Materials*. The Parties will have joint responsibility for the creation, preparation, production, reproduction, review (medical, legal and regulatory) of, in compliance with the Promotional Materials Rules approved by the JSC the Promotional Materials relating to each Licensed Product in the Profit-Share Territory. The Party that [**] will be responsible for filing the applicable Promotional Materials Rules with the FDA. All such Promotional Materials will be compliant with applicable Law and consistent with the applicable Joint Commercialization Plan for such Licensed Product and will be reviewed in accordance with the Promotional Materials Rules. The Parties will own jointly all rights, title and interests in and to any and all Promotional Materials for any Licensed Product for use in the Profit-Share Territory. Sage and Biogen will each: (a) require that its Sales Representatives do not make any representation, statement, warranty or guaranty with respect to a Licensed Product that is not consistent with the applicable product labeling for such Licensed Product, including approved limited warranty and disclaimers approved by each Party, if any, (b) require that its Sales Representatives do not make any statements, claims or undertakings to any person with whom they discuss or promote Licensed Products that are not consistent with, nor provide or use any labeling, literature or other materials other than those Promotional Materials provided by the Parties, and (c) if, at any time, either Party no longer approves of the use of specified Promotional Materials in the Profit-Share Territory, take appropriate action to remove the Promotional Materials from use and destroy such Promotional Materials or otherwise modify such Promotional Materials for an approved use. Neither Party will have the obligation to use any Promotional Material for any Licensed Product that such Party has not approved. Each Party will be responsible for its respective use of such Promotional Materials, and neither Party may use Promotional Materials that have not been approved by the JSC.

5.11.3 *Licensed Product Packaging*. The applicable Regulatory Lead Party will develop and submit to the JSC to review, discuss and determine whether to approve the packaging and labeling for each Licensed Product in the Profit-Share Territory, which in all cases will be consistent with the applicable Profit-Share Regulatory Strategy and in compliance with applicable Law.

5.11.4 *Licensed Product Trademarks*.

5.11.4.1 *Profit-Share Territory*. The Parties will jointly develop via the JCC (and thereafter modify and update) and submit to the JSC to review, discuss and determine whether to approve a strategy to govern the registration, maintenance, enforcement and defense of LP U.S. Trademarks (the "**LP U.S. TM Strategy**"). The Parties will select (through the JCC) the Trademarks for use with each Licensed Product for the Profit-Share Territory in accordance with the applicable Branding Strategy and the LP U.S. TM Strategy, including which Party will own each such Trademark, and the JCC will submit all such Trademarks to the JSC to review, discuss

and determine whether to approve. Neither Party will, directly or indirectly: (a) use in its respective businesses, any Trademark that is confusingly similar to, misleading or deceptive with respect to or that dilutes any LP U.S. Trademark in the Profit-Share Territory; or (b) do any act that endangers, destroys or similarly affects the value of the goodwill pertaining to the LP U.S. Trademarks in the Profit-Share Territory. Each Party agrees that it and its Affiliates and Sublicensees will (i) require that all Licensed Products that are sold bearing any LP U.S. Trademark are of a high quality consistent with industry standards for global pharmaceutical and biologic therapeutic products; (ii) not use such LP U.S. Trademarks in a way that might materially prejudice their distinctiveness or validity or the goodwill therein and includes the trademark registration symbol ® or ™ as appropriate; and (iii) not use any trademarks or trade names so resembling any of the LP U.S. Trademarks as to be likely to cause confusion or deception.

5.11.4.2 *Biogen Territory*. Biogen will have sole control over and decision-making authority with respect to the selection of the product name and Trademarks for use with all Licensed Products in the Biogen Territory. Biogen may elect to use any LP U.S. Trademark as the Trademark for the corresponding Licensed Product in the Biogen Territory, and if Sage is the owner of such LP U.S. Trademark, then Sage will and hereby does grant Biogen the exclusive right and license to use such LP U.S. Trademark in connection with the Commercialization of the applicable Licensed Product in the Biogen Territory. Biogen will register and maintain the LP U.S. Trademark in the Biogen Territory that it determines reasonably necessary in Sage's name, at Biogen's cost and expense.

5.12 **Coordination of Operational Activities**. The Parties recognize that each Party may benefit from discussing and sharing information and strategies with respect to Medical Affairs Activities for the Licensed Products between the Profit-Share Territory and the Biogen Territory. Accordingly, the Parties may discuss and share such information and strategies (a) through the Joint Medical Affairs Subcommittee, JCC or JSC, as applicable, with respect to the Profit-Share Territory and (b) through the appropriate Medical Affairs Activities or Commercialization activities representatives of each Party, with respect to the Biogen Territory, in each case ((a) and (b)) to the extent that the Parties agree that such coordination is appropriate (but in any event, no Committee will have any decision-making authority with respect to any Commercialization or Medical Affairs Activities for the Licensed Products in the Biogen Territory).

5.13 **Territorial Restrictions**.

5.13.1 *Cross-Territorial Restrictions*.

5.13.1.1 Biogen hereby covenants and agrees that, insofar as permitted by applicable Law, it will not, and will require its Affiliates and Sublicensees not to, knowingly promote, market, distribute, import, sell or have sold any Licensed 217 Product, including via internet or mail order, into countries in the Existing Partner Territory or from the Biogen Territory into the Profit-Share Territory. As to such countries in the Existing Partner Territory, Biogen will not, and will require its Affiliates and Sublicensees not to: (a) establish or maintain any branch, warehouse or distribution facility for any Licensed 217 Product in such countries, (b) engage in any advertising or promotional activities relating to any Licensed 217 Product that are directed primarily to customers or other purchasers or users of such Licensed 217 Product located in such countries, (c) solicit orders from any prospective purchaser located in such countries, (d) conduct any Distribution Matters with respect to Licensed 217 Products in such countries or (e) sell or distribute any Licensed 217 Product to any Person in the Biogen Territory who it knows intends to sell such Licensed 217 Product in such countries. If Biogen receives any order from a prospective purchaser located in a country in the Existing Partner Territory, insofar as permitted by applicable

Law, Biogen will immediately refer that order to Sage, and Biogen will not accept any such orders. Biogen will not deliver or tender (or cause to be delivered or tendered) any Licensed 217 Product into a country in the Existing Partner Territory.

5.13.1.2 Sage hereby covenants and agrees that, insofar as permitted by applicable Law, it will not, and will require that its Affiliates and Sublicensees do not, either directly or indirectly, knowingly promote, market, distribute, import, sell or have sold any Licensed Product, including via internet or mail order, into countries in the Biogen Territory. As to such countries in the Biogen Territory, Sage will not, and will require that its Affiliates and Sublicensees do not: (a) establish or maintain any branch, warehouse or distribution facility for any Licensed Product in such countries, except as permitted for the purposes of Section 8.1.2.1(a) (License Grants to Sage) or Section 8.1.2.1(b) (License Grants to Sage), (b) engage in any advertising or promotional activities relating to any Licensed Product that are directed primarily to customers or other purchasers or users of such Licensed Product located in such countries, (c) solicit orders from any prospective purchaser located in such countries, (d) conduct any Distribution Matters with respect to Licensed Products in such countries or (e) sell or distribute any Licensed Product to any Person outside the Biogen Territory who it knows intends to sell such Licensed Product in such countries. If Sage receives any order from a prospective purchaser located in a country in the Biogen Territory, insofar as permitted by applicable Law, Sage will immediately refer that order to Biogen, and Sage will not accept any such orders. Sage will not deliver or tender (or cause to be delivered or tendered) any Licensed Product into a country in the Biogen Territory.

5.13.2 *Profit-Share Territory Restrictions*. Within the Profit-Share Territory, the Party that is not the Commercialization Lead Party with respect to Distribution Matters for a Licensed Product hereby covenants and agrees that, insofar as permitted by applicable Law, it will not, and will require that its Affiliates and Sublicensees do not, either directly or indirectly, knowingly undertake any activities relating to recalls, returns or other similar matters with respect to any such Licensed Product. If the Party that is not the Commercialization Lead Party with respect to Distribution Matters for a Licensed Product within the Profit-Share Territory receives any order from a prospective purchaser in the Profit-Share Territory for such Licensed Product, then such Party will immediately refer that order to the Commercialization Lead Party, and such Party will not accept any such orders. If Sage receives any order for a Licensed 217 Product in the Profit-Share Territory, then it will refer such order to Biogen, and if a Licensed 217 Product sold in the Profit-Share Territory is returned to Sage, then Sage will promptly ship such Licensed 217 Product to a facility designated by Biogen. If Biogen receives any order for a Licensed 324 Product in the Profit-Share Territory, then it will refer such order to Sage, and if a Licensed 324 Product sold in the Profit-Share Territory is returned to Biogen, then Biogen will promptly ship such Licensed 324 Product to a facility designated by Sage.

5.14 **Commercialization Subcontracts**. Subject to this Section 5.14 (Commercialization Subcontracts), each Party may perform any of its Commercialization obligations under this Agreement with respect to any Licensed Product in the Territory through one or more Subcontractors, and each Party will [**]. Each Party may [**]. Prior to engaging any Subcontractor that is not a [**] to perform any Commercialization obligations assigned to such Party under a Joint Commercialization Plan, (a) [**], and (b) [**], then:

(i) if the proposed Subcontractor is a [**], such Party will first submit such proposal to the JCC to review and determine whether to approve the engagement of such [**] to perform the activities set forth in the applicable proposal. If the JCC approves the engagement of such [**] to perform the activities set forth in the applicable proposal, then the applicable Party may engage such contract sales organization to perform such activities, and if the JCC does not approve the engagement of such [**] to perform the activities set forth in the applicable proposal,

then the proposing Party may not engage such [**] to perform the activities within the scope of the proposal; and

(ii) if the proposed Subcontractor is not [**], then the Party proposing such engagement will have the right to proceed with entering into such subcontract without submitting such engagement to the JCC for review and approval [**].

Any subcontract permitted under this Section 5.14 (Commercialization Subcontracts) must be consistent with the terms of this Agreement, including that the Subcontractor undertakes in writing commercially reasonable obligations of confidentiality and non-use regarding Confidential Information that are substantially the same as those undertaken by the Parties with respect to Confidential Information pursuant to Article 10 (Confidentiality and Publication) hereof, and each Party will use reasonable efforts to require that the Subcontractor undertakes in writing to assign or exclusively license back (with the right to sublicense) to such Party all intellectual property with respect to the Licensed Products developed in the course of performing any such work. Without limitation of the foregoing, during the Term, each Party will, within a reasonable time thereafter, notify the other Party with respect to any Commercialization activities for the Licensed Products that such Party has subcontracted to any [**] for the Profit-Share Territory. However, in respect of any and all subcontracts entered into by either Party pursuant to this Section 5.14 (Commercialization Subcontracts), subject to Section 12.4 (Certain Third Party Claims Related to Licensed Products in the Profit-Share Territory) and Section 5.5 (Commercialization Costs), such Party will remain responsible for the work allocated to, and payment to, such Subcontractors to the same extent it would if it had done such work itself and compliance by its Subcontractors with the applicable provisions of this Agreement.

6. REGULATORY

6.1 Regulatory Lead Responsibilities. The JSC will discuss and determine whether to approve the regulatory strategy for the Licensed Products in the Profit-Share Territory (the "**Profit-Share Regulatory Strategy**"). The Regulatory Lead Party as determined by Section 6.1.1 (Regulatory Lead Responsibilities) or Section 6.1.2 (Regulatory Lead Responsibilities) or as otherwise designated by the JSC (the "**Regulatory Lead Party**") will have [**].

6.1.1 (a) [**] will be the Regulatory Lead Party for the [**] in the Profit-Share Territory from the Effective Date and until [**] and (b) after [**] will become the Regulatory Lead Party for the [**] in the Profit-Share Territory, in each case ((a) and (b)), subject to the Profit-Share Regulatory Strategy and the input and joint participation of the other Party as set forth in Sections 6.3 (Biogen Territory), 6.4 (Communications with Regulatory Authorities), 6.5 (Regulatory Meetings), 6.6 (Submissions), 6.8 (Right of Reference) and 6.9 (Recalls, Market Withdrawals or Corrective Actions). (i) [**] will be the Regulatory Lead Party for the [**] in the Profit-Share Territory from the Effective Date and until [**] and (ii) after [**] will become the Regulatory Lead Party for the [**] in the Profit-Share Territory, in each case, subject to the Profit-Share Regulatory Strategy and the input and joint participation of the other Party as set forth in Section 6.4 (Communications with Regulatory Authorities), Section 6.5 (Regulatory Meetings), 6.6 (Submissions), 6.8 (Right of Reference) and 6.9 (Recalls, Market Withdrawals or Corrective Actions). Biogen will be the Regulatory Lead Party for any [**] with respect to the Licensed Products for the Profit-Share Territory, subject to the Profit-Share Regulatory Strategy and the input and joint participation of Sage as set forth in Section 6.4 (Communications with Regulatory Authorities), Section 6.5 (Regulatory Meetings), Section 6.6 (Submissions), Section 6.8 (Right of Reference) and Section 6.9 (Recalls, Market Withdrawals or Corrective Actions).

6.1.2 Subject to applicable Laws, the Regulatory Lead Party designated under this Section 6.1 (Regulatory Lead Responsibilities) will own, or be assigned as set forth in Section 6.2

(Assignment), all INDs, NDAs, Regulatory Approvals and other Regulatory Materials for the applicable Licensed Products in the Profit-Share Territory, *provided* that, subject to Section 3.3.1.1 (Profit-Share Territory), in all cases [**] will own any [**] for the purposes of [**] that may be available. Subject to applicable Laws, Biogen will own all INDs, NDAs, Regulatory Approvals and other Regulatory Materials for the applicable Licensed Products in the Biogen Territory.

6.2 Assignment. Upon [**] will promptly [**], (a) the transfer and assignment to [**] all of [**] and (b) [**] the transfer and assignment under clause (a) [**] such transfer and assignment. Upon [**] will promptly [**], the transfer and assignment to [**] all of [**], and (ii) within [**] to transfer and assignment under clause (i) [**] will, in each case ((a) and (b)), [**] with respect to the applicable transfer and assignment described in this Section 6.2 (Assignment).

6.3 Biogen Territory. Subject to Section 6.4 (Communications with Regulatory Authorities), Section 6.5 (Regulatory Meetings), Section 6.6 (Submissions), 6.8 (Right of Reference) and 6.9 (Recalls, Market Withdrawals or Corrective Actions), Biogen will have sole control and decision-making authority over all regulatory matters, including filing all Regulatory Materials, with respect to the Licensed Products in the Biogen Territory. Biogen will own, and may file in its name or the name of its designee, all Regulatory Materials with respect to the Licensed Products throughout the Biogen Territory. Starting on the Effective Date, Sage will [**] begin and [**] complete no later than [**] after the Effective Date, the assignment and transfer to Biogen of all Regulatory Materials related to any Licensed 217 Product or any Licensed 324 Product solely for the Biogen Territory, in each case, that are not necessary for Sage's performance of the Ongoing 217 Studies or the KINETIC Study. Sage will provide reasonable and ongoing updates to Biogen regarding Sage's process with respect to such transfer and assignment. Starting from the Effective Date and until [**] becomes the Regulatory Lead Party with respect to the Licensed 217 Products or Licensed 324 Products, as applicable, [**] will provide [**] with access to all Regulatory Materials relating to the Ongoing 217 Studies or the KINETIC Study, in each case, as may be required for [**] to conduct regulatory matters with respect to Licensed Products in the [**] Territory.

6.4 Communications with Regulatory Authorities. Each Regulatory Lead Party will provide to the other Party for review and discussion a copy of each Material Communication with any Regulatory Authorities with respect to any Licensed Product for which such Party is the Regulatory Lead Party. [**] such Material Communication [**] such Material Communication [**] such Material Communication. With respect to any Material Communication with the FDA or the EMA or a Regulatory Authority in [**] related to a Licensed Product, the Regulatory Lead Party will allow the other Party [**]. Any Material Communication to a Regulatory Authority with respect to any Licensed Product in the Profit-Share Territory must be consistent with the Profit-Share Regulatory Strategy for such Licensed Product approved by the JSC.

6.5 Regulatory Meetings. Each Regulatory Lead Party will provide notice to the other Party within [**] after becoming aware of all meetings with the FDA [**], related to a Licensed Product for which it is the Regulatory Lead Party, or with as much advance notice as practicable under the circumstances. The Regulatory Lead Party will, to the extent reasonably practicable, permit the other Party to have, at such other Party's expense, [**] of such other Party attend, solely as non-participating observers, any such meetings with such Regulatory Authorities that are substantive; *provided*, *however*, that (a) if required by such Regulatory Authority, attendance by the other Party will be permitted; (b) attendance by the representatives of the other Party may not prevent participation of the reasonably necessary representatives of the Regulatory Lead Party due to restrictions imposed by such Regulatory Authority on the number of attendees at such meeting; and (c) the Regulatory Lead Party will not be obligated to change the schedule of such meeting in order to accommodate the schedule of such other Party's representatives.

6.6 **Submissions**. The Regulatory Lead Party will provide the other Party with a copy of all substantive Regulatory Materials for any Licensed Product proposed to be submitted to the FDA [**] for such other Party's review and comment sufficiently in advance of such Regulatory Lead Party's filing or submission thereof, and such Regulatory Lead Party will [**] all comments timely provided by such other Party in connection therewith. Regulatory Materials with respect to any Licensed Product in the Profit-Share Territory must be consistent with the Profit-Share Regulatory Strategy for such Licensed Product approved by the JSC. Each Regulatory Lead Party will also provide the other Party, through the JSC, with written notice of each of the following events with regard to each Licensed Product for which it is the Regulatory Lead Party (a) within a reasonable period of time following the occurrence thereof (and in any event reasonably in advance of any public disclosure thereof), to the extent notice was not previously provided: (i) [**]; and (ii) [**]; and (b) on a [**] basis at regularly scheduled meetings of the JSC or on such other frequency as is determined by the JSC, (i) [**] and (ii) [**].

6.7 **Costs of Regulatory Affairs**. The Parties will share as Joint Development Costs the FTE Costs and Out-of-Pocket Costs incurred in the performance of regulatory activities for Licensed Products in the Profit-Share Territory to the extent in accordance with the applicable Joint Development Budget. Biogen will be solely responsible for all costs and expenses incurred in connection with the performance of regulatory activities solely related to applying for and maintaining Regulatory Approval for the Licensed Products in the Biogen Territory.

6.8 **Right of Reference**. Each Party hereby grants to the other Party, and at the request of the other Party will grant to the other Party's Affiliates, licensees and Sublicensees (to the extent engaged in accordance with this Agreement), a "Right of Reference," as that term is defined in 21 C.F.R. § 314.3(b) (or any successor rule or analogous Law recognized outside of the United States), to, and a right to copy, access, and otherwise use, all information and data (including all CMC information) as well as data made, collected, or otherwise generated in the conduct of any Clinical Studies, or early access/named patient programs for the Licensed Products included in or used in support of any Regulatory Materials or drug master file Controlled by such Party or its Affiliates, licensees or Sublicensees that relates to any Licensed Product, (a) [**] or (b) as otherwise agreed by the JSC. Each Party will take such actions as may be reasonably requested by the other Party to give effect to the intent of this Section 6.8 (Right of Reference) and to give the other Party the benefit of the granting Party's Regulatory Materials in the other Party's territory as provided in the preceding sentence. Such actions may include (i) [**], or (ii) providing the other Party with [**].

6.9 **Recalls, Market Withdrawals or Corrective Actions**. In the event that any Regulatory Authority issues or requests a recall or takes a similar action in connection with a Licensed Product in the Field in the Territory, or in the event either Party determines that an event, incident or circumstance has occurred that may result in the need for a recall or market withdrawal of a Licensed Product in the Field in the Territory, the Party notified of such recall or similar action, or the Party that desires such recall or similar action, will as promptly as possible, notify the other Party by telephone or e-mail. [**] decide via the JSC whether to conduct a recall of, market withdrawal of or similar action with respect to a Licensed Product in the Profit-Share Territory and the manner in which such recall, market withdrawal or similar action will be conducted. [**]. Biogen will have the sole right to determine whether and when to conduct a recall of, market withdrawal of or similar action with respect to a Licensed Product in the Biogen Territory and the manner in which any such recall, market withdrawal or similar action will be conducted; *[**]*. Except as may otherwise be agreed to by the Parties, Biogen will bear the costs and expenses of any such recall, market withdrawal or similar action to the extent related to the Biogen Territory. Each Party will make available all of its pertinent records that may be reasonably requested by the other Party in order for a Party to effect a recall of a Licensed Product anywhere in the Territory. The Parties' rights and obligations under this Section 6.9 (Recalls, Market Withdrawals or Corrective Actions) will be subject to the terms of any Pharmacovigilance Agreement or Supply Agreement entered into between the Parties. In the event of a

conflict between the provisions of any Pharmacovigilance Agreement or Supply Agreement, as applicable, and this Section 6.9 (Recalls, Market Withdrawals or Corrective Actions), the provisions of such Pharmacovigilance Agreement or Supply Agreement, as applicable, will govern.

6.10 Reporting Adverse Events. The Parties will cooperate with regard to the reporting and handling of safety information involving the Licensed Products in the Territory, in each case, in accordance with the applicable regulatory Laws and regulations on pharmacovigilance and clinical safety. As soon as practicable after the Effective Date (but in no event longer than [**] after the Effective Date), the Parties will negotiate in good faith and execute an agreed pharmacovigilance agreement specifying the procedures and timeframes for complying with applicable Law pertaining to safety reporting for each Licensed Product and their related activities (a "**Pharmacovigilance Agreement**"), which Pharmacovigilance Agreement will be overseen by the JDC. The Pharmacovigilance Agreement will set forth each Party's responsibilities and obligations pertaining to safety collection, assessment and reporting of the Licensed Products based on relevant guidelines and applicable Law. The allocation of responsibilities between the Parties will be governed by the Pharmacovigilance Agreement. The Party that [**] with respect to a Licensed Product will own the global safety database for such Licensed Product.

6.11 Priority Review Voucher. If either Party receives a Rare Pediatric Disease Priority Review Voucher for a Licensed Product pursuant to Section 529 of the FD&C Act enabling priority review, then the Parties agree that [**].

7. MANUFACTURE

7.1 Manufacturing Responsibilities. Subject to Section 7.4 (Biogen Manufacturing Assumption Rights), [**] will be the Manufacturing Lead Party (a) for the [**] and (b) [**], unless and until Biogen assumes responsibility as the Manufacturing Lead Party for the [**] pursuant to Section 7.4 (Biogen Manufacturing Assumption Rights) and, in each case ((a) and (b)), [**] will be solely responsible for, and will, Manufacture (or have Manufactured) Licensed Products in accordance with the applicable Manufacturing Plan, the Supply Agreement to be entered into by the Parties pursuant to Section 7.5 (Supply Agreement). The Manufacturing Lead Party will have decision making authority over all day-to-day operational matters related to Manufacturing for Licensed Products for the Territory, subject to (i) the terms of the applicable Supply Agreement, (ii) with respect to [**], the Manufacturing Plan approved by the JSC, and (iii) in any applicable jurisdiction, the NDA- or marketing authorization-holding Party for a Licensed Product will have final decision-making authority sufficient to [**].

7.2 Manufacturing Plans. The JMC will develop a manufacturing plan (a) to ensure continuity and adequacy of supply of the active pharmaceutical ingredient and bulk drug product dosage form of each Product Class of Licensed Products for the Profit-Share Territory (and whether such Licensed Product will be supplied by Sage or by Biogen (if both Parties will be Manufacturing)) and, for so long as [**] is the Manufacturing Lead Party, for the [**] and (b) for final packaging and labeling in the Profit-Share Territory, which plan will also include the estimated associated budget of FTE Costs and Out-of-Pocket Costs anticipated to be incurred in the performance of activities under such plan (such included budget, a "**Manufacturing Budget**"), and the JMC will submit such manufacturing plan to the JSC to review, discuss and determine whether to approve (each, a "**Manufacturing Plan**"). The initial Manufacturing Plans for the Licensed 217 Products and the Licensed 324 Products will be approved by the JSC no later than [**] after the Effective Date. On an annual basis no later than [**] of each Calendar Year, or more often as the Parties deem appropriate, the Parties, through the JMC, may prepare and approve amendments to the then-current Manufacturing Plans for each Product Class and will submit such amendments to the JSC to review, discuss and determine whether to approve. Each such amended Manufacturing Plan will specify the information described in this Section 7.2 (Manufacturing Plans) for the next Calendar Year (and additional periods as reasonably determined by the Parties) and the

Manufacturing Budget included therein will appropriately itemize the costs and expenses for the activities undertaken pursuant to such Manufacturing Plan. Once approved by the JSC, an amended Manufacturing Plan (including its corresponding Manufacturing Budget) will become effective and supersede the previous Manufacturing Plan (including its corresponding Manufacturing Budget). In the event of any inconsistency between the Manufacturing Plan and this Agreement, the terms of this Agreement will prevail.

7.3 **Manufacturing Costs**. Active pharmaceutical ingredient and drug product dosage form, along with packaging and labeling, of the Licensed Products will be supplied for the [**] at [**] by [**] or by [**] (if [**] has assumed any portion of Manufacturing for the [**] pursuant to Section 7.4 ([**] Manufacturing Assumption Rights) and the Manufacturing Plan provides that [**] will supply Licensed Product for use in the [**]). Active pharmaceutical ingredient and bulk drug product of the Licensed Products for which [**] is the Manufacturing Lead Party will be supplied by [**] for the [**] at [**]. The cost specified in this Section 7.3 (Manufacturing Costs) is referred to in this Agreement as the "**Supply Price**." All Manufacturing Costs incurred by the Parties related to the Manufacture of the Licensed Products (whether supplied by Sage or Biogen) (i) [**], and (ii) [**].

7.4 **[**] Manufacturing Assumption Rights**. Notwithstanding any provision to the contrary set forth in this Agreement, (a) at any time during the Term, [**] may, in its sole discretion, become the Manufacturing Lead Party and assume responsibility for, and Manufacture or have Manufactured, for the [**] and, to the extent provided in the applicable Manufacturing Plan, the supply of active pharmaceutical ingredient for, as applicable, one or more Product Classes, and (b) within a reasonable period of time after the Effective Date, [**] will become the Manufacturing Lead Party and assume responsibility for, and Manufacture or have Manufactured, for the [**] for both Product Classes. If [**] exercises its rights under this Section 7.4 ([**] Manufacturing Assumption Rights), then (i) the Parties will amend via the JSC the Manufacturing Plan to reflect that [**] is the Manufacturing Lead Party for such Product Class with respect to the [**], (ii) [**], (iii) [**] will be deemed the Manufacturing Lead Party in the [**], solely with respect to the applicable Product Class for which [**] has become the Manufacturing Lead Party pursuant to this Section 7.4 ([**] Manufacturing Assumption Rights), and (iv) Sage or Biogen will have the right to request through the JSC to source [**] Licensed Product from [**] for the [**] , and, if the JSC so approves, then, [**] will supply the requesting Party for the [**] , and, if applicable, the Parties will negotiate in good faith a supply agreement to cover such supply to [**] consistent with the terms of this Agreement and any Supply Agreement between the Parties.

7.5 **Supply Agreement**. Within [**] after the Effective Date (as such period may be extended by written agreement of the Parties or otherwise agreed by the JMC), the Parties will negotiate in good faith and enter into a supply agreement pursuant to which [**] will supply (a) all [**], in the case of the [**] and (b) [**], in the case of the [**], in each case ((a) and (b)), of the Licensed Products in sufficient quantity as is necessary for (i) each Party's Development purposes in the Profit-Share Territory in accordance with the Joint Development Plans and Biogen's Development purposes in the Biogen Territory, consistent with the forecast in accordance with a forecasting schedule to be agreed by the Parties in the applicable Supply Agreement, and (ii) each Party's Commercialization purposes in the Profit-Share Territory in accordance with the Joint Commercialization Plans and Biogen's Commercialization activities with respect to Licensed Product for the Biogen Territory, which agreement will be consistent with the material terms set forth on Schedule 7.5 (Supply Agreements Material Terms) (each, a "**Supply Agreement**"). Each such Supply Agreement also will contain such other customary terms and conditions, including quality and business continuity protections, and will otherwise be consistent with the terms of this Agreement. If the Parties are unable to reach agreement on such provisions of the Supply Agreement within [**] after the Effective Date (which [**] period may be extended upon the agreement of the Parties), then upon request by either Party, the same shall be determined pursuant to Section 15.3.5 (Expert Arbitration).

7.6 **Second Source and Biogen Manufacturing Sites**. At either Party's request, the JMC will discuss in good faith engaging one or more Third Party contract manufacturers, including the identity of all Third Party contract manufacturers, as second sources (each, a "**Second Source**") in order to ensure adequate supply of any Licensed Product for the Profit-Share Territory or the Biogen Territory, as may be so requested by such Party, *provided* that following discussion with the JMC, (a) [**] and (b) [**], (i) [**] and (ii) [**]. If the JMC does not approve the engagement by a Party of any additional Second Sources [**], then [**]. The requesting Party will be the Party to enter into a supply agreement with any Second Source; *provided* that if the Manufacturing Lead Party is the requesting Party, then such requesting Party must use reasonable efforts to ensure that such supply agreement will contain a provision permitting the free assignment of such supply agreement to the other Party in the event that the non-requesting Party becomes the Manufacturing Lead Party with respect to, as the case may be, the Licensed Products being Manufactured under such agreement. [**].

7.7 **Reporting; Shortages**. Each Party will keep the other reasonably informed, through the JMC, regarding the status and progress of all Manufacturing activities for Licensed Products for the Territory (with respect to Licensed Product Manufactured by or on behalf of Sage) and for the Profit-Share Territory (with respect to Licensed Product Manufactured by or on behalf of Biogen). Within [**] after the end of each [**], (a) Sage will prepare and provide written reports to update the JMC on the status of [**] Licensed Products for the Territory [**] and (b) Biogen will prepare and provide written reports to update the JMC on the status of [**] Licensed Products [**], and each Party will provide written reports to update the JSC in the event of any [**] for the current or upcoming [**]. In the event of a shortage of any active pharmaceutical ingredient or bulk drug product dosage form of any Licensed Products for the Territory, the Parties will notify the JMC and in good faith discuss and seek to agree upon a plan to increase supply volume as necessary, which plan may include utilization of one or more Second Sources to be engaged in accordance with Section 7.6 (Second Source and Biogen Manufacturing Sites).

7.8 **Technology Transfer to Biogen**.

7.8.1 *Manufacturing Technology Transfer*. If [**] exercises its right under Section 7.4 ([**] Manufacturing Assumption Rights) and becomes the Manufacturing Lead Party with respect to a Product Class in the [**] or if [**] elects to Manufacture Licensed Product for the [**] at any [**] or engages a Second Source pursuant to Section 7.6 (Second Source and Biogen Manufacturing Sites), then [**] will promptly conduct a transfer of Manufacturing technology to [**] or its designee, to enable [**] or such designee at one or more locations as determined by [**] or such designee, to Manufacture [**], the applicable Licensed Products (for each Product Class, the "**Manufacturing Technology Transfer**"). The cost of such Manufacturing Technology Transfer for the first Second Source for the Profit-Share Territory for either Party or for any additional Second Source for the Profit-Share Territory for either Party approved by the JMC will be shared jointly by the Parties as Joint Development Costs; *provided* that [**] will pay the cost of any Manufacturing Technology Transfer for the [**]. Each such Manufacturing Technology Transfer will be conducted pursuant to and will be subject to a written plan developed by the Parties in good faith at least [**] prior to the anticipated commencement of such Manufacturing Technology Transfer. The Parties will work to complete such Manufacturing Technology Transfer as quickly as reasonably practicable, with the transfer of documentation necessary to support a demonstration batch of, as applicable, active pharmaceutical ingredient, bulk drug product dosage form, or packaged/labeled drug product dosage form, to be completed within [**] after [**] exercise of its right to assume Manufacturing responsibilities pursuant to Section 7.4 ([**] Manufacturing Assumption Rights) or [**] engagement of a Second Source pursuant to Section 7.6 (Second Source and Biogen Manufacturing Sites).

7.8.2 *Third Party Agreements*. If [**] agrees that [**] will become the sole Manufacturing Lead Party, or, under the terms of the applicable Supply Agreement, [**] has the right and elects to become the sole Manufacturing Lead Party, with respect to a Product Class for the Profit-Share

Territory, then upon [**] request, [**] will assign to [**] or its designee one or more (as requested by [**]) those Manufacturing contracts entered into by [**] or any of its Affiliates and any Third Party contract manufacturers that are solely related to the Manufacture of [**], the Licensed Products of such Product Class ("**Third Party Manufacturing Agreements**", those existing as of the Execution Date as set forth in Schedule 7.8.2), unless any such Third Party Manufacturing Agreement expressly prohibits such assignment, in which case [**] will cooperate with [**] in all reasonable respects to secure the consent of the applicable Third Party to such assignment. If any such consent is not obtained with respect to a Third Party Manufacturing Agreement for the applicable Product Class, then [**] will, and cause its Affiliates to, obtain for [**] the practical benefit of and burden under such Third Party Manufacturing Agreement by (a) entering into reasonable alternative arrangements on terms reasonably agreeable to [**], and (b) subject to the consent and control of [**], enforcing for the account of [**], any and all rights of [**] (or such Affiliate) against the Third Party counterparty arising out of the breach or cancellation thereof by such Third Party counterparty or otherwise.

7.8.3 *During Pendency of Manufacturing Technology Transfer*. If [**] has elected to assume Manufacturing Lead Party under Section 7.1 (Manufacturing Responsibilities) or Manufacturing Lead Party transfers to [**] under Section 7.8.2 (Third Party Agreements), during the pendency of any Manufacturing Technology Transfer performed pursuant to Section 7.8.1 (Manufacturing Technology Transfer) with respect to the applicable Licensed Products, and through the completion of any related transfer activities, [**] will continue to provide [**] with Manufacturing services and otherwise supply Licensed Product in accordance with the most recently agreed-upon Supply Agreement for, as applicable, such Licensed Products.

8. LICENSES

8.1 License Grants.

8.1.1 *License Grant to Biogen; Sage Retained Rights*.

8.1.1.1 *License Grant to Biogen*. Subject to the terms and conditions of this Agreement (including Sage's retained rights under Section 8.1.1.2 (Sage Retained Rights), Sage, on behalf of itself and its Affiliates, hereby grants Biogen a non-transferable (except as provided in Section 15.1 (Assignment)), sublicensable (as permitted in Section 8.2 (Sublicensing)) license under the Sage Licensed Technology to Develop, Manufacture, perform Medical Affairs Activities with respect to and Commercialize the Licensed Products in the Field in the Territory, which license will be (a) co-exclusive with Sage under the Sage Licensed Technology with respect to the Development, Manufacture, performance of Medical Affairs Activities with respect to and Commercialization of the Licensed Products in the Field in the Profit-Share Territory, and (b) exclusive (even as to Sage and its Affiliates) and royalty-bearing with respect to the Development, Manufacture, performance of Medical Affairs Activities with respect to and Commercialization of the Licensed Products in the Field for the Biogen Territory.

8.1.1.2 *Sage Retained Rights.* Notwithstanding the exclusive licenses granted to Biogen pursuant to Section 8.1.1.1 (License Grant to Biogen), and without limiting the generality of Section 8.5 (No Other Rights), Sage and its Affiliates will retain, under the Sage Licensed Technology, with the right to license (through multiple tiers, subject to Section 8.2 (Sublicensing), as applicable) to Sage's Affiliates and Third Parties, the following rights: (a) the right to Manufacture and have Manufactured the Licensed Products [**] for the purpose of Developing and Commercializing the Licensed Products for the Profit-Share Territory and the Existing Partner Territory and supplying Licensed Product to Biogen for use in the Biogen Territory, subject to and in accordance with the terms of this Agreement and (b) the right to Develop the Licensed 217

Products [**] solely for the purposes of obtaining Regulatory Approval for and Commercializing such Licensed 217 Products in the Existing Partner Territory, *provided* that [**], but subject to the terms of this Agreement.

8.1.2 *License Grants to Sage; Biogen Retained Rights*.

8.1.2.1 *License Grants to Sage*.

(a) Subject to the terms and conditions of this Agreement, Biogen, on behalf of itself and its Affiliates, hereby grants Sage the following non-transferable (except as provided in Section 15.1 (Assignment)), sublicensable (as permitted in Section 8.2 (Sublicensing)) licenses: (i) a co-exclusive (with Biogen), royalty-free, fully paid-up license under the Biogen Collaboration Technology and Biogen's interest in the Joint Collaboration Technology and (ii) a non-exclusive, royalty-free, fully paid-up license under the Biogen Background Technology, in each case ((i) and (ii)), to perform (or to have performed by permitted Subcontractors hereunder) the Joint Program Activities allocated to Sage under this Agreement.

(b) Subject to the terms and conditions of this Agreement, Biogen, on behalf of itself and its Affiliates, hereby grants Sage a non-transferable (except as provided in Section 15.1 (Assignment)), sublicensable (as permitted in Section 8.2 (Sublicensing)), non-exclusive, royalty-free, fully paid-up license under the Biogen Collaboration Technology and the Biogen Background Technology, in each case, to (i) Manufacture each Licensed 217 Product [**] for the purpose of Developing the Licensed 217 Products for and Commercializing Licensed 217 Products in the Existing Partner Territory, solely to the extent required under the Existing Partner Agreement, or (ii) [**], to Develop each Licensed 217 Products [**] for the purposes of obtaining Regulatory Approval for and Commercializing the Licensed 217 Product in the Existing Partner Territory, and to Commercialize the Licensed 217 Products in the Existing Partner Territory.

8.1.2.2 *Biogen Retained Rights*. Notwithstanding the exclusive nature of the foregoing license grant to Sage in Section 8.1.2.1(a) (License Grants to Sage), Biogen will retain, under the Biogen Collaboration Technology and Biogen's interest in the Joint Collaboration Technology, with the right to license (through multiple tiers and subject to Section 8.2 (Sublicensing), as applicable) to Biogen's Affiliates and Third Parties, the following rights: to Manufacture each Licensed Product [**] for the purpose of Developing and Commercializing Licensed Products in the Biogen Territory, and to Develop the Licensed Products [**] for the purposes of obtaining Regulatory Approval for and Commercializing any Licensed Product in the Territory, in each case, subject to and in accordance with the terms of this Agreement.

8.2 **Sublicensing**.

8.2.1 *Scope of Permissible Sublicensing*.

8.2.1.1 *Sage*.

(a) *To Subcontractors*. Sage may grant a sublicense of the rights granted by Biogen to Sage under Section 8.1.2 (License Grants to Sage; Biogen Retained Rights) in the Profit-Share Territory to a Subcontractor engaged in accordance with Section 3.9 (Development Subcontracts) or Section 5.14 (Commercialization Subcontracts), as

applicable, to perform Sage's responsibilities or exercise Sage's rights, in each case, under any Joint Development Plan, Joint Medical Affairs Plan, Joint Commercialization Plan or Manufacturing Plan or any Supply Agreement.

(b) *To Affiliates and Other Third Parties*. Sage may grant a sublicense of the rights granted by Biogen to Sage under Section 8.1.2 (License Grants to Sage; Biogen Retained Rights), which sublicensed rights may be further sublicensable through multiple tiers, to: (i) [**], or (ii) [**].

(c) *Responsibilities*. With respect to any sublicense granted pursuant to Section 8.2.1.1(a) (To Subcontractors) or Section 8.2.1.1(b) (To Affiliates and Other Third Parties), Sage will (i) remain responsible for the work allocated to, and payment to, such Subcontractor or Sublicensee to the same extent it would if it had done such work itself and compliance by such Subcontractor or Sublicensee with the applicable provisions of this Agreement, and Biogen will have the right to proceed directly against Sage without any obligation to first proceed against such Subcontractor or Sublicensee, as applicable, (ii) [**], (iii) require that each Subcontractor or Sublicensee undertakes in writing commercially reasonable obligations of confidentiality and non-use regarding Confidential Information that are substantially the same as those undertaken by the Parties with respect to Confidential Information pursuant to Article 10 (Confidentiality and Publication) hereof, and (iv) without limitation of the foregoing clause (iii), include in any such sublicense terms consistent with Sage's obligations to Biogen under this Agreement.

8.2.1.2 *Biogen*.

(a) *To Subcontractors*. Biogen may grant a sublicense of the rights granted by Sage to Biogen under Section 8.1.1 (License Grant to Biogen; Sage Retained Rights) in the Profit-Share Territory to a Subcontractor engaged in accordance with Section 3.9 (Development Subcontracts) or Section 5.14 (Commercialization Subcontracts), as applicable, to perform Biogen's responsibilities or exercise Biogen's rights, in each case, under any Joint Development Plan, Joint Medical Affairs Plan, Joint Commercialization Plan or Manufacturing Plan or any Supply Agreement.

(b) *To Affiliates and Other Third Parties*. Biogen may grant a sublicense of the rights granted by Sage to Biogen in Section 8.1.1 (License Grant to Biogen; Sage Retained Rights), which sublicensed rights may be further sublicensable through multiple tiers to: (i) [**]; (ii) [**]; and (iii) [**].

(c) *Responsibilities*. With respect to any sublicense granted pursuant to this Section 8.2.1.2(a) (To Subcontractors) or Section 8.2.1.2(b) (To Affiliates and Other Third Parties), Biogen will (i) remain responsible for the work allocated to, and payment to, such Subcontractor or Sublicensee to the same extent it would if it had done such work itself and compliance by such Subcontractor or Sublicensee with the applicable provisions of this Agreement, and Sage will have the right to proceed directly against Biogen without any obligation to first proceed against such Subcontractor or Sublicensee, as applicable, (ii) [**], (iii) require that each Subcontractor or Sublicensee undertakes in writing commercially reasonable obligations of confidentiality and non-use regarding Confidential Information that are substantially the same as those undertaken by the Parties with respect to Confidential Information pursuant to Article 10 (Confidentiality and Publication) hereof, and (iv) without limitation of the foregoing clause (iii), include in any such sublicense terms consistent with Biogen's obligations to Sage under this Agreement.

8.3 Third Party In-Licenses Payments.

8.3.1 *Existing In-License Agreements.*

8.3.1.1 *Sage*. Except as set forth in Section 8.3.1.3 (Third Party Payments owed to Existing Partner), Sage will be solely responsible for all Third Party Payments associated with any Existing Sage Agreement.

8.3.1.2 *Biogen*. Biogen will be solely responsible for all Third Party Payments associated with any license agreement or other agreement of Biogen or any of its Affiliates that exists as of the Effective Date under which Biogen or such Affiliate has obtained rights to any Biogen Background Technology.

8.3.1.3 *Third Party Payments owed to Existing Partner*.

(a) Sage owes to the Existing Partner (i) a royalty of [**] percent ([**]%) on annual Net Sales (as such term is defined in the Existing Partner Agreement) in the Territory by Sage, its Affiliates and its (sub)licensees of a Licensed 217 Product that [**], and (ii) a [**] royalty by Sage and the Existing Partner on annual Net Sales (as such term in defined in the Existing Partner Agreement) in the Territory by Sage, its Affiliates and its (sub)licensees [**] and, in each case ((i) and (ii)), such royalty is owed, on a country-by-country basis in the Territory, from the first commercial sale of such a Licensed 217 Product in such country until the expiration of the last Valid Claim (as defined in the Existing Partner Agreement) of the EP Background Patents or EP CMC Patent, as applicable, Covering such Licensed 217 Product in such country (a product described in clause (i) or (ii), an "**EP-Enhanced 217 Product**").

(b) In the event the JDC elects to Develop for Commercialization in the Profit-Share Territory an EP-Enhanced 217 Product, then the associated corresponding royalty payments owed to the Existing Partner in connection with Net Sales of such EP-Enhanced 217 Product in the Profit-Share Territory [**].

(c) In the event Biogen elects to Develop for Commercialization in the Biogen Territory an EP-Enhanced 217 Product, then subject to Section [**] Biogen will be [**] responsible for [**], and Biogen will comply, and will require its Affiliates and its Sublicensees to comply, with any obligations under the Existing Partner Agreement that apply to Biogen, its Affiliates or its Sublicensees and of which Biogen was informed in writing by Sage. Biogen will pay all undisputed amounts for such payments to Sage within [**] of receiving an applicable invoice from Sage for the same.

8.3.2 *After Effective Date Executed In-License Agreements*. The Parties hereby agree that all upfront, milestone, royalty and other payments to any Third Party in respect of any license agreement or other agreement entered into after the Effective Date in accordance with the subsections below of this Section 8.3 (Third Party In-Licenses Payments) will be deemed "**Third Party Payments**" and be subject to this Section 8.3 (Third Party In-Licenses Payments).

8.3.2.1 *New Technology*. After the Effective Date, a Party may wish to acquire a right or license under additional Patents or Know-How of Third Parties for the Development, Manufacture or Commercialization of Licensed Products for the Profit-Share Territory ("**New Technology**"). With respect to the New Technology for the Profit-Share Territory, such Party will (a) promptly notify the JSC in writing and keep the JSC reasonably informed of any negotiations

with respect to such right or license, including the proposed terms of any such license, and consider in good faith any comments of the other Party with respect thereto, and (b) in any event comply with the procedures set forth in Section 8.3.2.2 (*Inclusion Process*).

8.3.2.2 *Inclusion Process*. If, after the Effective Date, a Party wishes to acquire rights under any New Technology that would be Sage Licensed Technology or Biogen Licensed Technology, as applicable, then such Party will so notify the JSC and provide the JSC with a summary of the terms of any license or agreement, including any Third Party Payments owed to a Third Party as a result of the grant to the other Party of rights with respect to such New Technology or a Party's practice or use of any such New Technology in the performance of activities under this Agreement, under which such Party would acquire the rights to such subject matter in accordance with Section 8.3.2.1 (New Technology) (such applicable terms, the "**New Technology Terms**"). In connection with the discussion of the New Technology Terms, the JSC may also discuss [**]. In the event the JSC agrees to include such New Technology under this Agreement for the Profit-Share Territory, then such New Technology will be included in the Sage Licensed Technology or the Biogen Licensed Technology, as applicable and will be subject to the terms and conditions of this Agreement, and the Parties will be bound by such New Technology Terms. If the JSC does not agree to include such New Technology under this Agreement for the Profit-Share Territory as Sage Licensed Technology or Biogen Licensed Technology, as applicable, and one Party believes that such New Technology is [**], then the resolution procedure of Section 8.3.2.4 (New Technology Disputes) will apply. For clarity, with respect to New Technology other than [**], the Party proposing to acquire rights to such New Technology will have the right to obtain a license to such New Technology, but the other Party will not be bound by any agreement related to such New Technology or have any rights under, or cost-sharing obligations with respect to, such new Technology, unless such other Party agrees to include such New Technology under this Agreement.

8.3.2.3 *Cost Sharing*. Prior to entering into an agreement for New Technology and its inclusion under this Agreement for the Profit-Share Territory as Sage Licensed Technology or Biogen Licensed Technology pursuant to Section 8.3.2.2 (Inclusion Process), the JSC must agree on the amount of any Third Party Payments to be paid to the applicable Third Party in consideration for such New Technology, (a) [**], and (b) [**]. Notwithstanding any provision set forth in this Agreement to the contrary, with respect to any [**], Sage will bear fifty percent (50%) and Biogen will bear fifty percent (50%) of the Third Party Costs associated with such [**] to the extent allocable to the Profit-Share Territory. Nothing herein will prevent Biogen from obtaining rights (whether by acquisition or license) under any intellectual property right that is necessary or reasonably useful to Exploit any Licensed Product in the Biogen Territory. Except as set forth in this Section 8.3.2.3 (Cost Sharing) and subject to Section 9.9.3 (Third Party Payments), Biogen will be solely responsible for any and all payments under an agreement to acquire a right or license under additional Patents or Know-How of Third Parties for the Development, Manufacture or Commercialization of Licensed Products solely for the Biogen Territory.

8.3.2.4 *New Technology Disputes*. If a Party disputes whether certain New Technology is [**], then each Party may [**], then such New Technology will be included as Sage Licensed Technology or Biogen Licensed Technology and licensed to the applicable Party pursuant to the terms of this Agreement, as applicable[**].

8.4 **Combinations**. Notwithstanding any other provision of this Agreement, for purposes of the licenses grants under Section 8.1.1 (License Grant to Biogen; Sage Retained Rights) and Section 8.1.2 (License Grants to Sage; Biogen Retained Rights), with respect to any Licensed Product that is a Combination Product, such license will only include a license with respect to, respectively, the SAGE-217

component or the SAGE-324 component, as applicable, of such Combination Product (and not any Other Component Controlled by Sage or any of its Affiliates or Biogen or any of its Affiliates).

8.5 **No Other Rights**. Except as otherwise expressly provided in this Agreement, under no circumstances will a Party or any of its Affiliates, as a result of this Agreement, obtain any ownership interest, license or other right (whether by implication, estoppel or otherwise) in or to any Know-How, Patents or other intellectual property rights of the other Party or any of such other Party's Affiliates. Neither Party nor any of its Affiliates will use or practice any Know-How or Patents licensed or provided to such Party or any of its Affiliates outside the scope of or otherwise not in compliance with the rights and licenses granted to such Party and its Affiliates under this Agreement.

9. PAYMENTS

9.1 **Upfront Fee**. No later than five (5) Business Days after the Effective Date, Biogen will pay to Sage a one-time, non-refundable, non-creditable payment of Eight Hundred Seventy Five Million Dollars ($875,000,000).

9.2 **Equity Investment**. On the Execution Date, the Parties will enter into a share purchase agreement (the "**SPA**") pursuant to which Sage will sell to BIMA in one transaction, and BIMA will purchase from Sage, Six Hundred Fifty Million Dollars ($650,000,000) worth of shares of common stock of Sage, as more specifically set forth in such SPA.

9.3 **Licensed Product Reconciliation of Shared Costs; Profit Sharing**.

9.3.1 *Joint Development Costs Reconciliation*. The terms and conditions of this Section 9.3.1 (Joint Development Costs Reconciliation) will govern the rights and obligations of Biogen and Sage with respect to sharing the Joint Development Costs with respect to a Product Class, unless and until Sage exercises an Opt-Out Right in accordance with Section 9.4 (Sage Opt-Out) for such particular Product Class. During the Term, for each Calendar Quarter in which a Party or its Affiliates performs Development activities under a Joint Development Plan, (a) within [**] after the end of each such Calendar Quarter, such Party will submit to a finance officer designated by Sage and a finance officer designated by Biogen (the "**Finance Officers**") a report setting forth such Party's actual Joint Development Costs with respect to each Product Class of Licensed Products, which report will specify [**] (a "**Development Expense Report**"), and (b) within [**] after the end of each such Calendar Quarter, such Party will submit to the Finance Officers [**]. Within [**] after receipt of such Development Expense Reports, the Finance Officers will confer and agree in writing on whether a reconciliation payment is due from Sage to Biogen or Biogen to Sage, and if so, the amount of such reconciliation payment, for all Licensed Products in a Product Class in accordance with the applicable provisions of this Agreement, which payment in any event will be made such that Sage and Biogen share equally the Joint Development Costs. Sage or Biogen, as applicable, if required to pay such reconciliation payment, will submit the undisputed portion of any such payment to Biogen or Sage, as applicable, within [**] after the end of such [**] conferral period. In the event of any disagreement with respect to the calculation of such reconciliation payment, the owing Party will pay to the other Party any disputed portion within [**] after the date on which Sage and Biogen, using good faith efforts, resolve the dispute. In addition, following the Effective Date, each Party will consider in good faith other reasonable procedures proposed by the other Party for sharing financial information in order to permit each Party to close its books periodically in a timely manner.

9.3.2 *Reconciliation/Reimbursement Prior to First Commercial Sale*. The terms and conditions of this Section 9.3.2 (Reconciliation/Reimbursement Prior to First Commercial Sale) will govern the rights and obligations of Biogen and Sage with respect to sharing the Joint Medical Affairs Costs and the Joint Commercialization Costs prior to the First Commercial Sale of a Licensed Product in the Product

Class in the Profit-Share Territory, unless and until Sage exercises an Opt-Out Right in accordance with Section 9.4 (Sage Opt-Out) for such particular Product Class. During the Term, for each Calendar Quarter prior to the Calendar Quarter in which the First Commercial Sale of a Licensed Product in a Product Class occurs in the Profit-Share Territory, (a) within [**] after the end of each such Calendar Quarter, Sage and Biogen will submit to the Finance Officers a report setting forth the Joint Medical Affairs Costs and Joint Commercialization Costs such Party incurred in such Calendar Quarter with respect to each Product Class of Licensed Products prior to First Commercial Sale in the United States, which report for a Product Class will specify [**] (a "**Pre-Commercialization Expense Report**"), and (b) within [**] after the end of each such Calendar Quarter, such Party will submit to the Finance Officers [**]. Within [**] after receipt of such Medical Affairs and Commercialization Expense Reports, the Finance Officers will confer and agree in writing on whether a reconciliation payment is due from Sage to Biogen or Biogen to Sage, and if so, the amount of such reconciliation payment, which payment in any event will be made such that Sage and Biogen share equally the Joint Medical Affairs Costs and Joint Commercialization Costs for all Licensed Products in a Product Class in accordance with the applicable provisions of this Agreement. Sage or Biogen, as applicable, if required to pay such reconciliation payment, will submit the undisputed portion of any such payment to Biogen or Sage, as applicable, within [**] after the end of such [**] conferral period. In the event of any disagreement with respect to the calculation of such reconciliation payment, the owing Party will pay to the other Party any disputed portion within [**] after the date on which Sage and Biogen, using good faith efforts, resolve the dispute. In addition, following the Effective Date, each Party will consider in good faith other reasonable procedures proposed by the other Party for sharing financial information in order to permit each Party to close its books periodically in a timely manner.

9.3.3 *Profit Sharing Following First Commercial Sale*. The terms and conditions of this Section 9.3.3 (Profit Sharing Following First Commercial Sale) will govern the rights and obligations of Biogen and Sage with respect to the OP&L Share with respect to a Product Class, unless and until Sage exercises an Opt-Out Right in accordance with Section 9.4 (Sage Opt-Out) for such Product Class.

9.3.3.1 *Share of Operating Profits and Operating Losses*. For so long as (a) a Licensed Product in a Product Class is being sold in the Profit-Share Territory and (b) Sage has not exercised its Opt-Out Right in accordance with Section 9.4 (Sage Opt-Out) for the applicable Product Class, Sage and Biogen will share equally (50:50) all Operating Profits and all Operating Losses (as applicable) for all Licensed Products in such Product Class in the Profit-Share Territory.

9.3.3.2 *Calculation and Payment*. During the Term, for each Calendar Quarter beginning with the Calendar Quarter in which the First Commercial Sale of a Licensed Product in a Product Class occurs in the Profit-Share Territory, within [**] after the end of each such Calendar Quarter, (a) Biogen will report to the Finance Officers [**]. and (b) Sage will report to the Finance Officers [**], in each case ((a) and (b)), in the format of the Profit and Loss Statement set forth on Schedule 9.3.3.2 (Calculation and Payment),which report will specify for a Product Class [**] (each, a "**Post-Commercialization Expense Report**"). During the Term, for each Calendar Quarter beginning with the Calendar Quarter in which the First Commercial Sale of a Licensed Product in a Product Class occurs in the Profit-Share Territory, within [**] after the end of each such Calendar Quarter, (i) Biogen will report to the Finance Officers [**], and Sage and Biogen will each report to the Finance Officers [**], and (ii) Sage will report to the Finance Officers [**], and Sage and Biogen will each report to the Finance Officers [**]. Within [**] after receipt of such Post-Commercialization Expense Reports, the Finance Officers will confer and agree upon in writing a consolidated financial statement (i) setting forth the Operating Profit or Operating Loss for such Calendar Quarter for, as the case may be, for such Licensed Product, in the Profit-Share Territory, and (ii) calculating each Party's share of such Operating Profit or Operating Loss. Within [**] after such [**] conferral period, Biogen or Sage, as applicable, will make a payment to Sage or Biogen respectively, as applicable, so that each of Biogen and Sage has been compensated for

its respective share of such Operating Profits, or has borne its respective share of such Operating Loss, as applicable, after giving effect to the Net Sales invoiced by, as applicable, Biogen or Sage and the Joint Medical Affairs Costs and Joint Commercialization Costs incurred by Sage and Biogen with respect to such Licensed Product in such Product Class in such Calendar Quarter; *provided*, *however*, that in the event of any disagreement with respect to the calculation of such payment, any undisputed portion of such payment will be paid in accordance with the foregoing timetable and the remaining, disputed portion will be paid within [**] after the date on which Biogen and Sage, using good faith efforts, resolve the dispute. In addition, following the Effective Date, each Party will consider in good faith other reasonable procedures proposed by the other Party for sharing financial information in order to permit each Party to close its books periodically in a timely manner.

9.4 **Finance Working Group**. With respect to the financial reporting activities between the Parties, the JSC (or the Parties if the JSC does not exist) will establish a finance working group (the "Finance Working Group") to coordinate the activities and reporting by the Parties as set forth in Section 9.3.1 (Joint Development Costs) through Section 9.3.3 (Profit-Sharing Following Commercialization) and Section 9.11.2 (Reports and Royalty Payments) and to assist the JSC in its responsibilities with respect to the review and resolution of financial matters. In particular, the Finance Working Group will:

(a) facilitate the creation of each Joint Development Budget, Long Term Joint Development Budget, Joint Medical Affairs Budget, Long Term Joint Medical Affairs Budget, Joint Commercialization Budget, Long Term Joint Commercialization Budget and Manufacturing Budget;

(b) reconcile financial and accounting matters between the Parties;

(c) initiate and execute an effective and efficient revenue and cost-sharing process (cross-charges);

(d) review and recommend for the Parties' consideration modifications to the FTE Rate used to calculate Joint Development Costs, Joint Medical Affairs Costs or Joint Commercialization Costs;

(e) discuss, prepare and determine whether to approve for submission to the JSC for approval a FTE time tracking approach to be following by each Party;

(f) cooperate to ensure that all budgets referenced in Section 9.4(a) (Finance Working Group) agreed to for a Calendar Year (or any other given period) can be interpreted for the purposes of both Parties' internal financial and audit reporting requirements, including each Party's fiscal year reporting;

(g) implement a series of reporting requirements for actual and forecasted financial information, available at times to be agreed by the Parties through the Finance Working Group, consistent with the need to report the results of the OP&L Share;

(h) monitor the budget, expense and revenue reporting requirements between the Parties related to Licensed Products to ensure that each Party is able to comply with its respective internal financial and audit reporting requirements and, as appropriate, recommending to the JSC for approval, changes to the reporting requirements under this Agreement; and

(i) undertake such other tasks with respect to the calculation, implementation and reporting for the Parties' sharing of Joint Development Costs, Joint Medical Affairs Costs, Joint Commercialization Costs and Net Revenues as the Parties agree.

9.5 Sage Opt-Out.

9.5.1 *Exercise of Opt-Out*. Sage may elect to opt-out of the OP&L Share set forth in Section 9.3.3 (Profit Sharing Following First Commercial Sale) on a Product Class-by-Product Class basis with respect to all Licensed Products in such Product Class in accordance with this Section 9.4 (Sage Opt-Out) (each such right to opt out, an "**Opt-Out Right**", and all such Licensed Products in the applicable Product Class, the "**Opt-Out Products**"). At any time during the Term after [**], Sage may elect to exercise an Opt-Out Right by providing written notice to Biogen, which notice must specify the Product Class to which Sage wishes the Opt-Out Right to apply. The date on which Sage exercises an Opt-Out Right for a specific Product Class as set forth in this Section 9.4 (Sage Opt-Out) will be deemed the "**Opt-Out Date**" for such Product Class (or for all Product Classes if Sage exercises an Opt-Out Right for all Product Classes on the same date).

9.5.2 *Effect of Opt-Out*. If Sage exercises an Opt-Out Right pursuant to Section 9.5.1 (Exercise of Opt-Out) for a Product Class, then, from and after the Opt-Out Date with respect to the Opt-Out Products:

9.5.2.1 Sage will continue to perform, as the case may be depending on when the Opt-Out Date occurs, (a) the Development activities under the then-applicable Joint Development Plan(s) for such Opt-Out Products, (b) the Medical Affairs Activities under the then-applicable Joint Medical Affairs Plan(s) for such Opt-Out Products or (c) the Commercialization activities under the then-applicable Joint Commercialization Plan(s) for such Opt-Out Products, in each case ((a), (b) and (c)), subject to Section 9.5.2.4 (Effect of Opt-Out), for which Sage was responsible thereunder for a single, consecutive transition of period of up to [**] (such period, the "**Opt-Out Wind-Down Period**" and such activities, the "**Opt-Out Wind-Down Activities**", and Biogen will pay Sage for the Joint Development Costs, Joint Medical Affairs Costs and Joint Commercialization Costs, as applicable, incurred by Sage to conduct the Opt-Out Wind-Down Activities, in each case, to the extent consistent with the corresponding Joint Development Budget, Joint Medical Affairs Budget or Joint Commercialization Budget approved and included in such Joint Development Plan, Joint Medical Affairs Plan or Joint Commercialization Plan prior to the Opt-Out Date or updated versions of one or more of such plans or budgets approved by the JSC to account for the Opt-Out Wind-Down Period for the applicable Product Class (collectively, the "**Opt-Out Wind-Down Costs**"), and Biogen will pay all undisputed invoiced amounts for such payments to Sage no later than [**] after receiving an applicable invoice from Sage for the same. Notwithstanding the foregoing, if Sage exercises its Opt-Out Right during [**] of any Product Class of Licensed Products, then [**];

9.5.2.2 Biogen will become the Regulatory Lead Party with respect to the applicable Licensed Products in the Profit-Share Territory in the Product Class for which Sage exercised its Opt-Out Right;

9.5.2.3 Biogen will be solely responsible for all other costs and expenses incurred in connection with the further Development, performance of Medical Affairs Activities with respect to and Commercialization of the Opt-Out Products in the Profit-Share Territory after the Opt-Out Wind-Down Period, including (a) [**] and (b) [**];

9.5.2.4 No later than [**] after the Opt-Out Date for a Product Class, Biogen will notify Sage in writing if it desires the Opt-Out Wind Down Period to be less than [**];

9.5.2.5 Other than the performance of the Opt-Out Wind-Down Activities, Sage will not have any performance obligations or funding obligations with respect to the Opt-Out Products in the Profit-Share Territory under any then-applicable Joint Development Plan(s), Joint Medical Affairs Plan(s) or Joint Commercialization Plan(s), or any other right to the OP&L Share, including under Section 9.3 (Licensed Product Reconciliation of Shared Costs; Profit Sharing);

9.5.2.6 Biogen will pay Sage the Territory Royalties (a) pursuant to Section 9.8.2 (United States Royalties) for Net Sales of the Opt-Out Products by Biogen and its Related Parties in the United States for their respective Royalty Terms and (b) pursuant to Section 9.8.1 (Biogen Territory Royalties) for Net Sales of the Opt-Out Products by Biogen and its Related Parties in the Biogen Territory (always excluding the United States) for their respective Royalty Terms;

9.5.2.7 the Biogen Territory for the Opt-Out Products will be deemed to include the United States for purposes of this Agreement (except for royalties owed to Sage on Net Sales of the Opt-Out Products in the United States, which will be calculated in accordance with Section 9.8.2 (United States Royalties)); and

9.5.2.8 the Parties will otherwise have the rights and obligations with respect to the Licensed Products as set forth in this Agreement.

9.6 Licensed Products Regulatory/Commercial Milestone Payments.

9.6.1 *Licensed 217 Products Regulatory/Commercial Milestones*. Subject to Section 9.6.3 (Payment Terms for 217/324 Regulatory Milestone Payments), Biogen will make one-time, non-refundable milestone payments to Sage (each, a "**217 Regulatory/Commercial Milestone Payment**") upon the first achievement by Biogen or its Affiliates or Sublicensees or, if applicable, by Sage or any of its Related Parties in the case of the 217 Regulatory/Commercial Milestone Events of Rows 1, 2 and 3 of the regulatory/commercial milestone events set forth in this Section 9.6.1 (Licensed 217 Products Regulatory/Commercial Milestones) for the first Licensed 217 Product (each, a "**217 Regulatory/Commercial Milestone Event**") to achieve the applicable 217 Regulatory/Commercial Milestone Event. For clarity, [**].

217 Regulatory/Commercial Milestone Event	**217 Regulatory/Commercial Milestone Payment**			
	For [**]	For [**]	For [**]	For [**]
[**]	[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]	[**]

The maximum total amount payable by Biogen to Sage under this Section 9.6.1 (Licensed 217 Products Regulatory/Commercial Milestones) for all Licensed 217 Products under this Agreement is Four Hundred Seventy Five Million Dollars ($475,000,000).

9.6.2 *Licensed 324 Products Regulatory/Commercial Milestones*. Subject to Section 9.6.3 (Payment Terms for 217/324 Regulatory Milestone Payments), Biogen will make one-time, non-refundable milestone payments to Sage (each, a "**324 Regulatory/Commercial Milestone Payment**")

upon the first achievement by Biogen or its Affiliates or Sublicensees or, if applicable, by Sage or any of its Related Parties in the case of the 324 Regulatory/Commercial Milestone Events of Rows 1, 2 and 3 of the regulatory/commercial milestone events set forth in this Section 9.6.2 (Licensed 324 Products *Regulatory/Commercial Milestones*) for the first Licensed 324 Product (each, a "**324 Regulatory/Commercial Milestone Event**") to achieve the applicable 324 Regulatory/Commercial Milestone Event. For clarity, [**].

324 Regulatory/Commercial Milestone Event	324 Regulatory/Commercial Milestone Payment		
	For [**]	For [**]	For [**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]
[**]	[**]	[**]	[**]

The maximum total amount payable by Biogen to Sage under this Section 9.6.2 (Licensed 324 Products *Regulatory/Commercial Milestones*) for all Licensed 324 Products under this Agreement is Five Hundred Twenty Million Dollars ($520,000,000).

9.6.3 *Payment Terms for 217/324 Regulatory Milestone Payments*. Biogen will provide Sage with written notice of the first achievement of each 217 Regulatory/Commercial Milestone Event and each 324 Regulatory/Commercial Milestone Event, and, if applicable, Sage will provide Biogen with written notice of the first achievement of each of 217 Regulatory/Commercial Milestone Events set forth in Rows 1, 2 and 3 of the table in Section 9.6.1 (Licensed 217 Products Regulatory/Commercial Milestones) and the first achievement of each of the 324 Regulatory/Commercial Milestone Events set forth in Rows 1, 2 and 3 in the table in Section 9.6.2 (Licensed 324 Products *Regulatory/Commercial Milestones*), in each case, no later than [**] after such achievement. Thereafter, Biogen will pay to Sage, as applicable, the corresponding 217 Regulatory Milestone Payment or 324 Regulatory Milestone Payment within [**] after Biogen's receipt of an invoice for the same from Sage, which invoice may be delivered only after receipt of notice of achievement of the applicable milestone event.

9.7 Licensed Products Sales Milestone Payments.

9.7.1 *Licensed 217 Products Sales Milestones*.

9.7.1.1 Subject to Section 9.7.3 (Payment Terms for Sales Milestone Payments), Biogen will make one-time, non-refundable milestone payments to Sage (each, a "**217 Sales Milestone Payment**") when annual Net Sales of all Licensed 217 Products across all Indications in the Territory in a given Calendar Year first reach the Dollar threshold values indicated below in one of the applicable tables set forth under either Section 9.7.1.1(a) (Licensed 217 Products Sales Milestones) or Section 9.7.1.1(b) (Licensed 217 Products Sales Milestones) during the Term (each, a "**217 Sales Milestone Event**"):

(a) if Sage has not exercised an Opt-Out Right for the Licensed 217 Products:

Non-Opt-Out Right 217 Sales Milestone Event	217 Sales Milestone Payment
annual Net Sales of Licensed 217 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]
annual Net Sales of Licensed 217 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]
annual Net Sales of Licensed 217 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]

(b) if Sage has exercised an Opt-Out Right for the Licensed 217 Products, then beginning in the next Calendar Year after the exercise of such Opt-Out Right:

Opt-Out Right 217 Sales Milestone Event	217 Sales Milestone Payment
annual Net Sales of Licensed 217 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]
annual Net Sales of Licensed 217 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]
annual Net Sales of Licensed 217 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]

(c) For clarity, the 217 Sales Milestone Payments will each only be paid once, such that, the maximum total amount payable by Biogen to Sage under this Section 9.7.1 (Licensed 217 Products Sales Milestones) is either (i) if Sage *has not* exercised an Opt-Out Right for the Licensed 217 Products: Three Hundred Million Dollars ($300,000,000), or (ii) if *Sage has exercised* an Opt-Out Right for the Licensed 217 Products: Five Hundred Twenty Five Million ($525,000,000). It being understood in each case ((i) and (ii)) that the 217 Sales Milestone Payments will be additive, such that if more than one 217 Sales Milestone Event set forth in the either table above is achieved in the same Calendar Year and the same 217 Sales Milestone Event has not been achieved in any prior Calendar Year, then Biogen will pay to Sage each of the 217 Sales Milestone Payments for such achieved 217 Sales Milestone Events in a Calendar Year in accordance with Section 9.7.1 (Licensed 217 Products Sales Milestones) (*e.g.*, if Sage *has not* exercised an Opt-Out Right for the Licensed 217 Products, and, if in one Calendar Year, all three (3) 217 Sales Milestone Events of the table in Section 9.7.1.1(a) (Licensed 217 Products Sales Milestone Payments) are achieved and no 217 Sales Milestone Events has been achieved in any prior Calendar Year, then Biogen would pay Sage Three Hundred Million Dollars ($300,000,000) in accordance with Section 9.7.3 (Payment Terms for Sales Milestone Payments)).

9.7.2 *Licensed 324 Products Sales Milestones.*

9.7.2.1 Subject to Section 9.7.3 (Payment Terms for Sales Milestone Payments), Biogen will make one-time, non-refundable milestone payments to Sage (each, a "**324 Sales Milestone Payment**") when annual Net Sales of all Licensed 324 Products across all Indications in the Territory in a given Calendar Year first reach the Dollar threshold values indicated below in one of the applicable tables set forth under either Section 9.7.2.1(a) (Licensed 324 Products Sales

Milestones) or 9.7.2.1(b) (Licensed 324 Products Sales Milestones) during the Term (each, a "**324 Sales Milestone Event**"):

(a) if Sage has not exercised an Opt-Out Right for the Licensed 324 Products:

Non-Opt-Out Right 324 Sales Milestone Event	324 Sales Milestone Payment
annual Net Sales of Licensed 324 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]
annual Net Sales of Licensed 324 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]
annual Net Sales of Licensed 324 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]

(b) if Sage has exercised an Opt-Out Right for the Licensed 324 Products, then beginning in the next Calendar Year after the exercise of such Opt-Out Right:

Opt-Out Right 324 Sales Milestone Event	324 Sales Milestone Payment
annual Net Sales of Licensed 324 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]
annual Net Sales of Licensed 324 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]
annual Net Sales of Licensed 324 Products in the Territory in a Calendar Year first equaling or exceeding $[**]	[**]

(c) For clarity, the 324 Sales Milestone Payments will only each be paid once, such that the maximum total amount payable by Biogen to Sage under this Section 9.7.2 (Licensed 324 Product Sales Milestones) is either (i) if Sage *has not* exercised an Opt-Out Right for the Licensed 324 Products: Three Hundred Million Dollars ($300,000,000), and (ii) if *Sage has exercised* an Opt-Out Right for the Licensed 324 Products: Five Hundred Twenty Five Million ($525,000,000). It being understood in each case ((i) and (ii)) that the 324 Sales Milestone Payments will be additive, such that if more than one 324 Sales Milestone Event set forth in the either table above is achieved in the same Calendar Year and the same 324 Sales Milestone Event has not been achieved in any prior Calendar Year, Biogen will pay to Sage the total amount of the 324 Sales Milestone Payments for such achieved 324 Sales Milestone Events in a Calendar Year in accordance with Section 9.7.2 (Licensed 324 Product Sales Milestones) (*e.g.*, if Sage *has not* exercised an Opt-Out Right for the Licensed 324 Products, and, if in one Calendar Year, all three (3) 324 Sales Milestone Events of the table in Section 9.7.2.1(a) (Licensed 324 Products Sales Milestones) are achieved and no 324 Sales Milestone Events has been achieved in any prior Calendar Year, then Biogen would pay Sage Three Hundred Million Dollars ($300,000,000) in accordance with Section 9.7.3 (Payment Terms for Sales Milestone Payments)).

9.7.3 *Payment Terms for Sales Milestone Payments*. Biogen will provide Sage with written notice of the first achievement of each 217 Sales Milestone Event and each 324 Sales Milestone Event, and, if applicable, Sage will provide Biogen with written notice of the first achievement of each of

217 Sales Milestone Event set forth in the table in Section 9.7.1.1(a) (Licensed 217 Products Sales Milestones) and the first achievement of each of the 324 Sales Milestone Event set forth in the table in Section 9.7.2.1(a) (Licensed 324 Products Sales Milestones), in each case, no later than [**] after such achievement, and will pay to Sage, as applicable, the corresponding 217 Sales Milestone Payment or 324 Sales Milestone Payment within [**] after Biogen's receipt of an invoice for the same from Sage, which invoice may be delivered only after receipt of notice of achievement of the applicable milestone event.

9.8 Licensed 217 Product and Licensed 324 Product Royalties.

9.8.1 *Biogen Territory Royalties*. During the Royalty Term for each Licensed 217 Product and each Licensed 324 Product, Biogen will make royalty payments to Sage based on aggregate annual Net Sales made, respectively, for each Licensed 217 Product and for each Licensed 324 Product in the Field in the Biogen Territory (in all cases, excluding the United States) by Biogen and its Related Parties in a given Calendar Year at the royalty rates set forth in the table below in this Section 9.8.1 (Biogen Territory Royalties) (such royalties, "**Biogen Territory Royalties**"):

Annual Net Sales in a Given Calendar Year of a Licensed 217 Product or a Licensed 324 Product in the Biogen Territory	**Royalty Rate Paid on the Portion of Annual Net Sales of a Licensed 217 Product in the Biogen Territory**	**Royalty Rate Paid on the Portion of Annual Net Sales of a Licensed 324 Product in the Biogen Territory**
Portion less than $[**]	[**]%	[**]%
Portion equal to or greater than $[**] but less than $[**]	[**]%	[**]%
Portion equal to or greater than $[**]	[**]%	[**]%

9.8.2 *United States Royalties*. In the event that Sage has exercised an Opt-Out Right with respect to either or both of the Product Classes for the Licensed 217 Products or the Licensed 324 Products, as applicable, then from and after the Opt-Out Date for the applicable Product Class, during the remainder of the Royalty Term in the United States for each Licensed 217 Product or each Licensed 324 Product in the Product Class(es) for which Sage exercised the Opt-Out Right, Biogen will make royalty payments to Sage based on aggregate annual Net Sales made, respectively, for each such Licensed 217 Product or for each Licensed 324 Product in the Field in the United States by Biogen and its Related Parties in a given Calendar Year at the royalty rates set forth in the table below in this Section 9.8.2 (Territory Royalties) (such royalties, the "**United States Royalties**"):

9.8.3 Annual Net Sales in a Given Calendar Year of a Licensed Product in the United States	**Royalty Rate Paid on the Portion of Annual Net Sales of a *Licensed 217 Product* in the Territory in the United States**	**Royalty Rate Paid on the Portion of Annual Net Sales of a *Licensed 324 Product* in the Territory in the United States**
Portion less than $[**]	[**]%	[**]%
Portion equal to or greater than $[**] but less than $[**]	[**]%	[**]%
Portion equal to or greater than $[**]	[**]%	[**]%

9.9 Royalty Reductions.

9.9.1 *Royalty Reduction for No Valid Claim*. Subject to Section [**], on a Licensed Product-by-Licensed Product and country-by-country basis, if, during any Calendar Quarter prior to the expiration of the Royalty Term for a Licensed 217 Product or Licensed 324 Product (as applicable) in such country in the Biogen Territory, there is no Valid Claim of a Royalty Bearing Patent that would be infringed by the sale of such Licensed 217 Product or Licensed 324 Product (as applicable) in such country, then, for the remainder of the Royalty Term for such Licensed 217 Product or Licensed 324 Product (as applicable) in such country, the Biogen Territory Royalties or the United States Royalties, as applicable, will be reduced by [**] percent ([**]%).

9.9.2 *Reduction for Generic Approval*. On a Licensed Product-by-Licensed Product and country-by-country basis in the Biogen Territory, commencing in the first Calendar Quarter in which Generic Competition occurs and continuing thereafter for the remainder of the Royalty Term for such Licensed Product in such country:

9.9.2.1 if the Generic Competition in such country with respect to such Licensed Product during such Calendar Quarter equals or exceeds [**] percent ([**]%) but is less than [**] percent ([**]%), then the Biogen Territory Royalties or the United States Royalties, as applicable, for such Licensed Product will be reduced by [**] percent ([**]%);

9.9.2.2 if the Generic Competition in such country with respect to such Licensed Product during such Calendar Quarter equals [**] percent ([**]%), the Biogen Territory Royalties or the United States Royalties, as applicable, for such Licensed Product (a) will be reduced by [**]%) and (b) will be further reduced by [**] percent ([**]%) for each additional percentage increase in Generic Competition above [**] percent ([**]%). For example, if the Generic Competition in a country with respect to a Licensed Product during a Calendar Quarter equals [**] percent ([**]%), then the total reduction for the Biogen Territory Royalties or the United States Royalties, as applicable, for such Licensed Product would be [**] percent ([**]%).

9.9.3 *Licensed Third Party Payments*. Subject to Section 9.9.4 (Cumulative Reductions Floor), for any agreement with a Third Party pursuant to which Biogen is granted rights (whether by acquisition or license) under (a) any Patents of such Third Party or (b) any Patents and Know-How of such Third Party inseparably, in each case ((a) and (b)), that are [**], as applicable, a Licensed 217 Product or a Licensed 324 Product in a country in the Biogen Territory, Biogen may credit [**] percent ([**]%) of [**] specifically owed for such Licensed 217 Product or Licensed 324 Product, as applicable, made by Biogen to such Third Party under such agreement in a given Calendar Quarter (to the extent attributable to a Licensed Product) against [**], as applicable, payable by Biogen to Sage in such Calendar Quarter.

9.9.4 *Cumulative Reductions Floor*. In no event will the Biogen Territory Royalties or the United States Royalties, as applicable, otherwise due to Sage for any Licensed 217 Product or any Licensed 324 Product in a Calendar Quarter during the applicable Royalty Term for such Licensed 217 Product or Licensed 324 Product be reduced by more than [**] percent ([**]%) of the amount that would otherwise be due in such Calendar Quarter for such Licensed 217 Product or Licensed 324 Product as a result of the reductions set forth in Section 9.9.1 (Royalty Reduction for No Valid Claim) or Section 9.9.3 (Licensed Product Third Party Payments). [**].

9.10 **Other Amounts Payable**. With respect to any amounts owed under this Agreement by one Party to the other for which no other invoicing and payment procedure is specified in this Article 9 (Payments), within [**] after the end of each Calendar Quarter, each Party will provide an invoice, together with reasonable supporting documentation, to the other Party for such amounts owed in respect of such Calendar Quarter. The owing Party will pay any undisputed amounts within [**] of receipt of the invoice, and any disputed amounts owed by a Party will be paid within [**] of resolution of the dispute.

9.11 **Payment Terms**.

9.11.1 *Manner of Payment*. All payments to be made by each Party (the "**Paying Party**") to the other Party hereunder will be made in Dollars by wire transfer to such bank account as such other Party may designate in writing.

9.11.2 *Reports and Royalty Payments*. All amounts payable by Biogen to Sage pursuant to Section 9.8 (Licensed 217 Product and Licensed 324 Product Royalties) will be paid within [**] after the end of each Calendar Quarter when such amounts become payable. Each such payment of royalties by Biogen will be accompanied by a written report that includes, at a minimum, the following information for the applicable Calendar Quarter, each listed by Licensed 217 Product and Licensed 324 Product and by country of sale: [**].

9.11.3 *Records and Audits*.

9.11.3.1 **Record Retention; Audits**. Each Party will keep complete, true, and accurate books and records in accordance with GAAP, in reasonable detail to permit the other Party to confirm the accuracy of all payments or costs reported hereunder for at least the preceding [**] in relation to this Agreement, including in relation to Joint Development Costs, Joint Commercialization Costs, Joint Medical Affairs Costs, Manufacturing Costs, all FTE Costs, Out-of-Pocket Costs and other costs and expenses incurred in its performance under this Agreement, and Net Sales. Upon reasonable (but in any case no less than [**] advance notice) by one Party (the "**Auditing Party**") to the other Party (the "**Audited Party**") and not more than [**] and [**] per audited period (in each case, except for cause), the Audited Party and its Affiliates will permit, and will cause their Sublicensees to permit, an independent certified public accounting firm of internationally-recognized standing (the "**Auditor**"), selected by the Auditing Party and reasonably acceptable to the Audited Party, to have access during normal business hours to such of the records of the Audited Party and its Affiliates and, if applicable, their Sublicensees, as may be reasonably necessary to verify the payments made or costs reported by the other Party and the related reports, statements and books of accounts, as applicable for any year ending not more than [**] prior to the date of such request. The Auditor will enter a confidentiality agreement reasonably acceptable to the Audited Party governing the use and disclosure of the Audited Party's information disclosed to such firm, and such firm will disclose to the Auditing Party only whether information provided by the Audited Party to the Auditing Party as described in the preceding sentences was accurate and the specific details concerning any discrepancies, which information will be Confidential Information of the Audited Party.

9.11.3.2 **Audit Disputes**. Any disputes with respect to the findings of such Auditor may be referred by either Party to the dispute resolution procedure set forth in Section 15.3 (Dispute Resolution). If either Party is found to have been underpaid any amounts payable to such Party hereunder or to have overpaid to the other Party any amounts payable hereunder, then such first Party will be entitled to recover any undisputed discrepancy, plus interest as set forth in Section 9.11.9 (Interest Due), no later than [**] after delivery to the Parties of the final report of the Auditor. The fees charged by the Auditor will be paid by the Auditing Party; *provided* that if the audit discloses a net underpayment of amounts owed or overreporting of expenses by the Audited Party of more than [**] percent ([**]%) of total amounts owed or expenses reported by the Audited Party for any Calendar Year period covered by the audit, then the Audited Party will pay the reasonable fees and expenses charged by the Auditor. The Auditing Party will treat all financial information disclosed by the Auditor pursuant to this Section 9.11.3 (Records Retention and Audits) as Confidential Information of the Audited Party for purposes of Article 10 (Confidentiality and Publication) of this Agreement, and will cause the Auditor to do the same.

9.11.4 *Currency Exchange*. With respect to annual Net Sales invoiced in Dollars, the annual Net Sales and the amounts due by the Paying Party to the other Party hereunder will be expressed in Dollars. When conversion of payments from any foreign currency is required to be undertaken by the Paying Party, the Dollar equivalent will be calculated using the Paying Party's then-current standard exchange rate methodology as applied in its external reporting for the conversion of foreign currency sales into Dollars.

9.11.5 *Taxes*.

9.11.5.1 *General*. Each Party will be responsible for all Taxes imposed on such Party's net income, or on net income allocated to such Party under applicable Law. To the extent one Party pays Taxes imposed on net income of the other Party, the other Party will reimburse the paying Party for any such Taxes paid. The amounts payable pursuant to this Agreement ("**Payments**") will not be reduced on account of any Taxes unless required by applicable Law. A payor Party will deduct and withhold from the Payments any Taxes that it is required by applicable Law to deduct or withhold including from subsequent Payments ("**Withholding Taxes**"), and any such Withholding Taxes shall be treated as having been paid to the payee pursuant to this Agreement; provided that the payor Party will provide the payee with written notice of the required withholding as promptly as reasonably practical (and in any event, no later than [**]) prior to making such payment and will cooperate with the payee as provided in this Section 9.11.5 (Taxes) in order to mitigate the imposition of such Withholding Taxes. Notwithstanding the foregoing, if the recipient Party is entitled under any applicable tax treaty to a reduction of rate of, or the elimination of, or recovery of, applicable Withholding Tax, it may deliver to the payor Party or the appropriate Governmental Authority the prescribed forms necessary to reduce the applicable rate of withholding or to relieve the payor Party of its obligation to withhold Tax. In such case the payor Party will apply the reduced rate of withholding, or not withhold, as the case may be, provided that the payor Party is in receipt of evidence, in a form reasonably satisfactory to the payor Party of the recipient Party's entitlement to a reduced or no withholding rate at least [**] prior to the time that the applicable Payment is due. If a payor Party withholds any amount, it will pay to the recipient Party the balance (for the avoidance of doubt, net of the withholding) when due, make timely payment to the proper taxing authority of the withheld amount, and send the recipient Party proof of such payment within [**] following that payment. The Parties will reasonably cooperate to reduce or eliminate any withholding required under applicable Law, and to provide the other with reasonable assistance to enable the recovery, as permitted by Law, of Withholding Taxes, with recovery to be for the benefit of the payee Party. Sage will provide a complete and accurate IRS Form W-9 to Biogen prior to payment of the due date of the Upfront Payment and will promptly

provide a new properly executed IRS Form W-9 if information provided on the previous IRS Form W-9 changes or if an updated IRS Form W-9 or its equivalent is required by law or requested by Biogen. Based on the foregoing, the Parties acknowledge and agree that, as of the date hereof, no Withholding Taxes (other than with respect to the Federal Republic of Germany) are expected to be deducted or withheld from any Payments.

9.11.5.2 *VAT*. It is understood and agreed between the Parties that any payments made under this Agreement are exclusive of VAT. Where VAT is properly added to a payment made under this Agreement, the payor Party will pay the amount of such VAT only on receipt of a valid Tax invoice (or, where there is no provision in the legislation for the jurisdiction concerned that a VAT invoice is required to be issued, a written demand containing such information as is customary in that jurisdiction) issued in accordance with the Laws and regulations of the country in which the VAT is chargeable. If in the event of any amendment to VAT Laws the sums invoiced without VAT in accordance with this Agreement become or are subject to VAT, then the applicable invoices will be deemed to be exclusive of VAT and the payor Party will, in addition to the sums payable, pay the recipient Party, on receipt of an updated, valid VAT invoice, the full amount of VAT chargeable thereon. The Parties acknowledge and agree that, as at the date of this Agreement, no VAT is expected to be charged by Sage on amounts payable by Biogen pursuant to this Agreement, as Sage is not required to account for VAT as at the date of this Agreement in relation to the services, rights and licenses provided by Sage to Biogen pursuant to this Agreement. Notwithstanding anything in this Agreement to the contrary, Sage agrees that prior to establishing a taxable presence for VAT outside the United States of America, assigning, delegating, sublicensing or otherwise transferring (to include by merger) its rights or obligations under this Agreement to an assignee, delegate, sublicensee or other transferee (including by operation of a merger) which would require a charge to VAT (other than VAT chargeable by a Government Authority of the United States of America) on amounts payable by Biogen under this Agreement (either singly or together referred to as a "**VAT Restructuring**"), Sage will: (a) consult with Biogen; and (b) take account of reasonable representations made by Biogen where Biogen is able to demonstrate to Sage's reasonable satisfaction that Sage's proposed assignee, delegate, sublicensee or other transferee would give rise to irrecoverable VAT costs for Biogen which would not otherwise exist in the absence of any act, default, omission or transaction involving Biogen.

9.11.5.3 *Tax Actions*. Notwithstanding anything in this Agreement to the contrary, if an action (including but not limited to a VAT Restructuring, any assignment, delegation or sublicense of a Party's rights or obligations under this Agreement (including a subsequent transfer following such assignment, delegation or sublicense), a change or adoption of a Tax reporting position, a change in the corporate or tax status or location of a Party, or any failure to comply with applicable Laws or filing or record retention requirements) by a Party (a "**Tax Action**") leads to the imposition or incidence of any Withholding Tax liability or VAT on the other Party that would not have been imposed in the absence of such Tax Action or in an increase in such liability above the liability that would have been imposed in the absence of such Tax Action (such additional or increased Withholding Tax liability or VAT, "**Incremental Taxes**"), such Party will indemnify and hold harmless the other Party (the "**Non-Acting Party**") from any such Incremental Taxes (except to the extent that the other Party can reclaim or otherwise offset or recover such Incremental Taxes, *provided* that such other Party will be reimbursed for any reasonable out of pocket costs incurred in the reclaim). The indemnification obligation described in the preceding sentence shall not apply, however, to the extent such Incremental Taxes (a) would not have been imposed but for a prior Tax Action taken by the Non-Acting Party or (b) are attributable to a the failure of the Non-Acting Party to comply with the requirements of this Section 9.11.5 (Taxes).

9.11.6 Payment Allocation.

9.11.6.1 Subject to the remainder of this Section 9.11.6 (Payment Allocation), payments under this Agreement will be paid by BIMA and BIG separately and in such proportions as determined solely by Biogen in its reasonable discretion and shall be invoiced separately by Sage; *provided* that separate invoices will only be provided by Sage if Biogen provides details of the allocations of such amounts between BIMA and BIG in writing and reasonably in advance of each such payment becoming due and failure to provide such invoices will not affect Biogen's obligations to make any such payments as and when due.

9.11.6.2 With respect to the upfront payment described in Section 9.1 (Upfront Fee), BIG will pay a portion of such amount in consideration of the rights granted outside of the United States which will equal [**] Dollars ($[**]), and BIMA will pay a portion of such amount in consideration of the rights granted in the United States which will equal [**] Dollars ($[**]).

9.11.6.3 With respect to the payments for the 217 Regulatory/Commercial Milestone Payments in Section 9.6.1 and the 324 Regulatory/Commercial Milestone Payments in Section 9.6.2 (Licensed 324 Products *Regulatory/Commercial Milestones*), BIG will pay a percentage of each such amount in consideration of the rights granted outside of the United States and BIMA will pay a percentage each such amount in consideration to the rights granted in the United States, such percentages, in each case, to be determined by Biogen at the time at which such amounts are due. Notwithstanding the foregoing, [**].

9.11.6.4 With respect to the 217 Sales Milestone Payments in Section 9.7.1 (Licensed 217 Products Sales Milestones) and 324 Sales Milestone Payments in and Section 9.7.2 (Licensed 324 Products Sales Milestones), BIG will pay a percentage of each such amount in consideration of the rights granted outside of the United States, and BIMA will pay a percentage of each such amount in consideration to the rights granted in the United States, such percentages, in each case, to be determined by Biogen at the time at which such amounts are due.

9.11.6.5 With respect to Biogen Territory Royalties and the Territory Royalties, BIG will pay such Biogen Territory Royalties described in Section 9.8.1 (Biogen Territory Royalties), and in the event that Sage has exercised an Opt-Out Right with respect to either or both of the Product Classes for the Licensed 217 Products or the Licensed 324 Products, as applicable, then from and after the Opt-Out Date for the applicable Product Class, during the remainder of the Royalty Term for each Licensed 217 Product or each Licensed 324 Product in the Product Class(es) for which Sage exercised the Opt-Out Right, BIMA will pay such United States Royalties described in Section 9.8.2 (United States Royalties).

9.11.6.6 With respect to all payments set forth in this Article 9 (Payments) that are not described in Section 9.11.6.2 (Payment Allocation) through Section 9.11.6.5 (Payment Allocation) above, BIG will pay such amount in consideration of the rights granted outside of the United States and BIMA will pay such amount in consideration to the rights granted in the United States, such percentages, in each case, to be determined by Biogen at the time in which such amounts are due.

9.11.6.7 For clarity, nothing in this Section 9.11 (Payment Terms) is intended to limit Section 15.15 (Coordination between BIMA and BIG) of this Agreement.

9.11.7 *Blocked Payments*. In the event that, by reason of applicable Law in any country, it becomes impossible or illegal for the Paying Party to transfer, or have transferred on its behalf, payments owed by the Paying Party to the other Party hereunder, the Paying Party will promptly notify the other Party of the conditions preventing such transfer and such payments will be deposited in local currency in the

relevant country to the credit of the other Party in a recognized banking institution designated by the other Party or, if none is designated by the other Party within a period of [**], in a recognized banking institution selected by the Paying Party, as the case may be, and identified in a written notice given to the other Party.

9.11.8 *Right of Offset*. Upon notice to the other Party, each Party will have the right to offset any undisputed Payment not paid within the specified period owed by such Party to the other Party under this Agreement, including in connection with any breach or indemnification obligation by such Party, against any undisputed Payments owed by the other Party to such Party under this Agreement. Such offsets will be in addition to any other rights or remedies available to the offsetting Party under this Agreement and applicable Laws.

9.11.9 *Interest Due*. The Paying Party will pay the other Party interest on any undisputed payments that are not paid on or before the date such payments are due under this Agreement at a rate equal to [**] percentage points ([**]%) per annum or, if lower, the maximum applicable legal rate, calculated on the total number of days payment is delinquent.

10. CONFIDENTIALITY AND PUBLICATION

10.1 **Nondisclosure and Non-Use Obligations**.

10.1.1 All Confidential Information disclosed by one Party (the "**Disclosing Party**") to the other Party (the "**Receiving Party**") under this Agreement will be maintained in confidence by the Receiving Party and will not be disclosed to a Third Party or used for any purpose except pursuant to the licenses granted under this Agreement or as otherwise set forth herein, without the prior written consent of the Disclosing Party. Notwithstanding any provision to the contrary set forth in this Agreement, Confidential Information will not include any information that:

(a) is known by the Receiving Party at the time of its receipt from the Disclosing Party, and not through a prior disclosure by the Disclosing Party, as documented by the Receiving Party's business records;

(b) is known to the public before its receipt from the Disclosing Party, or thereafter becomes generally known to the public through no breach of this Agreement by the Receiving Party;

(c) is subsequently disclosed to the Receiving Party by a Third Party who is not known by the Receiving Party to be under an obligation of confidentiality to the Disclosing Party; or

(d) is developed by the Receiving Party independently of Confidential Information received from the Disclosing Party, as documented by the Receiving Party's business records.

For clarity, and notwithstanding any provision to the contrary set forth in this Agreement, [**]. Specific aspects or details of Confidential Information will not be deemed to be within the public domain or in the possession of the Receiving Party merely because the Confidential Information is encompassed by more general information in the public domain or in the possession of the Receiving Party. Further, any combination of Confidential Information will not be considered in the public domain or in the possession of the Receiving Party merely because individual elements of such Confidential Information are in the public domain or in the possession

of the Receiving Party unless the combination and its principles are in the public domain or in the possession of the Receiving Party.

The terms and conditions of this Agreement are hereby deemed to be the Confidential Information of each Party.

10.1.2 *Permitted Disclosures*. Notwithstanding the obligations of confidentiality and non-use set forth in Section 10.1.1 (Nondisclosure and Non-Use Obligations) above, a Receiving Party may provide Confidential Information disclosed to it and disclose the existence and terms and conditions of this Agreement, in each case, as may be reasonably required in order to perform its obligations or to exercise its rights under this Agreement, and to the extent such disclosure is:

10.1.2.1 to its Affiliates, Sublicensees or licensees, and their employees, directors, agents, consultants, or advisors to the extent necessary for the potential or actual performance of its obligations or exercise of its rights under this Agreement, in each case, who are under an obligation of confidentiality with respect to such information that is no less stringent than the terms and conditions of this Section 10.1 (Nondisclosure and Non-Use Obligations);

10.1.2.2 to the Regulatory Authorities in connection with any filing, application or request for Regulatory Approval in accordance with the terms of this Agreement; *provided* that reasonable measures shall be taken to assure confidential treatment of such Confidential Information to the extent practicable and consistent with applicable Law;

10.1.2.3 made in connection with the Prosecution and Maintenance of Sage Licensed Technology or Biogen Licensed Technology in an effort to secure, maintain, defend or enforce Patents, as contemplated by this Agreement, or, with respect to such activities only, otherwise with the prior written consent of the disclosing Party's intellectual property counsel;

10.1.2.4 to bring or defend litigation and to enforce Patents in connection with the Receiving Party's rights and obligations pursuant to this Agreement;

10.1.2.5 subject to Section 10.1.2.8 (Permitted Disclosures), required to be disclosed by applicable Law, including by the rules or regulations of the United States Securities and Exchange Commission or similar regulatory agency in a country other than the United States or of any stock exchange or listing entity;

10.1.2.6 (a) with respect to the terms and conditions of this Agreement, any *bona fide* actual or prospective acquirers, underwriters, investors, lenders, other financing sources, licensors, Sublicensees or licensees and to employees, directors, agents, consultants or advisors of such Third Party, and (b) with respect to any other Confidential Information of the other Party, any *bona fide* actual or prospective acquirers, licensors, Sublicensees or licensees and to employees, directors, agents, consultants or advisors of such Third Party, *provided* that any entity or individual receiving Confidential Information under clause (a) or (b) has a need to know such information and is under obligations of confidentiality and non-use with respect to such information that are no less stringent than the terms and conditions of this Section 10.1 (Nondisclosure and Non-Use Obligations) (but of duration customary in confidentiality agreements entered into for a similar purpose); and

10.1.2.7 to any Third Party to the extent a Party is required to do so pursuant to the terms and conditions of an in-license agreement with such Third Party relating to the intellectual property rights sublicensed to such Party hereunder, *provided* that any such Third Party receiving

Confidential Information is under obligations of confidentiality and non-use with respect to such information that are no less stringent than the terms and conditions of this Section 10.1 (Nondisclosure and Non-Use Obligations).

10.1.2.8 if a Party, after consultation with counsel, determines it is required by Law to disclose Confidential Information of the other Party that is subject to the confidentiality or non-disclosure provisions of this Section 10.1 (Nondisclosure and Non-Use Obligations), then such Party will promptly inform the other Party of the disclosure that is being sought (and to the extent possible at least [**] notice) in order to provide the other Party an opportunity to challenge or limit the disclosure and will reasonably cooperate with the other Party to do so. In the event that no such protective order or other remedy is obtained, or the Disclosing Party waives compliance with certain terms of this Article 10 (Confidentiality And Publication), then the Receiving Party will furnish only that portion of Confidential Information that the Receiving Party is advised by counsel is legally required to be disclosed. Notwithstanding Section 10.1.1 (Nondisclosure and Non-Use Obligations), Confidential Information that is permitted or required to be disclosed will remain otherwise subject to the confidentiality and non-use provisions of this Section 10.1 (Nondisclosure and Non-Use Obligations). If either Party concludes based on the reasonable opinion of counsel that a copy of this Agreement must be filed with the United States Securities and Exchange Commission or similar regulatory agency in a country other than the United States, such Party will, within a reasonable time prior to any such filing (and to the extent possible at least [**] prior to any such filing), provide the other Party with a copy of this Agreement showing any provisions hereof as to which the Party proposes to request confidential treatment, will provide the other Party with an opportunity to comment on any such proposed redactions and to suggest additional redactions, and will take such Party's reasonable comments into consideration before filing such copy of this Agreement and use reasonable efforts to have terms identified by such other Party afforded confidential treatment by the applicable regulatory agency.

10.2 Publication and Publicity.

10.2.1 *Publication*. [**]. Each Party via the Joint Publications Working Group will have the right to propose additions or other amendments to an existing Publications Plan for approval by the JSC. The Joint Publications Working Group will determine which of Sage or Biogen will have the first right (but not the obligation) to be responsible for each Joint Publication contemplated in each Publication Plan (such appointed Party, the "**Lead Publishing Party**"); *provided*, *however*, that, unless otherwise agreed by the Joint Publications Working Group in the Publications Plan, Sage will be the Lead Publishing Party for all Joint Publications contemplated in the applicable Publications Plan related to the Ongoing 217 Studies or the KINETIC Study. Upon Biogen becoming the Regulatory Lead Party with respect to the applicable Product Class, the Joint Publications Working Group will determine which of the Parties will be the Lead Publishing Party with respect to Joint Publications, including those related to the Ongoing 217 Studies or the KINETIC Study, as applicable. In the event that the Lead Publishing Party elects not to exercise such right with respect to a certain Publication, the responsibility for such Publication will pass to the other Party. [**].

10.2.2 *Right to Review.* Each Party will have the right to review any Publication that contains results arising from the performance of Development, Commercialization or Medical Affairs Activities with respect to any Licensed Product or that includes Confidential Information of the non-publishing Party. The publishing Party will provide the other non-publishing Party the opportunity to review such proposed Publication at least [**] prior to the earlier of its intended submission for publication or publication, and the publishing Party will consider in good faith any reasonable and timely comments submitted by the non-publishing Party (it being understood and agreed that if there is a material amendment to such Publication after the publishing Party has provided such Publication to the non-publishing Party,

such reviewing period will be extended to ensure that at least [**] remain for the non-publishing Party to review subsequent to the date the non-publishing Party received the amended Publication). Further, the non-publishing Party will have the right (a) to propose modifications to the Publication to remove Confidential Information solely of such non-publishing Party, in which case the publishing Party will remove such Confidential Information solely of the non-publishing Party identified by the non-publishing Party, or (b) to request a reasonable delay in Publication in order to protect patentable information, in which case the publishing Party will delay submission for a period of [**] (or such other period as may be mutually agreed by the Parties in writing) to enable the non-publishing Party to file Patent applications protecting the non-publishing Party's rights in such information. The publishing Party subsequently will provide the non-publishing Party a copy of the Publication at the time of its submission. Without limiting the foregoing, each publishing Party agrees to acknowledge the contributions of the other Party and the employees of the other Party, in all Publications, as scientifically appropriate. After the release of any Publication by a Party in accordance with this Section 10.2 (Publication and Publicity), such Party may further disclose the information contained in such Publication without the need for further notice to, or review by, the other Party under this Section 10.2.2 (Publication and Publicity) or otherwise. In the event of any dispute between the Parties with respect to the contents of any Joint Publication or any Biogen Publication, the Parties will submit such dispute to the Joint Publications Working Group to determine resolution.

10.2.3 *Publicity*. Except as set forth in Section 10.1 (Nondisclosure and Non-Use Obligations), Section 10.2.1 (Publication) or Section 10.3 (Press Release, Public Announcements and Other Public Disclosure) and in this Section 10.2.3 (Publicity), the terms and conditions of this Agreement may not be disclosed by either Party, and neither Party will use the name or Trademark of the other Party or its employees in any publicity, news release or other disclosure relating to this Agreement, its subject matter, or the activities of the Parties under this Agreement without the prior express written permission of the other Party, *provided* that the Party making such disclosure or use of the name or Trademark of the other Party or its employees, not covered by Section 10.1 (Nondisclosure and Non-Use Obligations), Section 10.2.1 (Publication) or Section 10.3 (Press Release, Public Announcements and Other Public Disclosure) and in this Section 10.2.3 (Publicity), obtains the prior consent (not to be unreasonably withheld, conditioned or delayed) of such other Party if such disclosure references such other Party and otherwise complies with Section 10.1 (Nondisclosure and Non-Use Obligations) or (b) as expressly permitted by the terms and conditions hereof. Notwithstanding the foregoing, either Party may disclose information (a) that has already been made public through a press release, publication or other public statement made in accordance with the terms of this Agreement so long as such information remains true, correct and current, or (b) in connection with disclosures under a joint communication plan agreed upon by the Parties. The Parties, through their respective heads of Corporate Communications and Investor Relations, will agree on procedures to operationalize the provisions of Section 10.3 (Press Release, Public Announcements and Other Public Disclosure) and in this Section 10.2.3 (Publicity).

10.3 Press Release, Public Announcements and Other Public Disclosure.

10.3.1 On the Execution Date, the Parties will issue the joint press release substantially in the form attached as in Schedule 10.3.1 (Press Release).

10.3.2 Except as provided in Section 10.2.3 (Publicity) or this Section 10.3 (Press Release), neither Party will issue a press release, public announcement or other public disclosure relating to this Agreement or the Parties' activities hereunder without the prior written approval of the other Party (such approval not to be unreasonably withheld, conditioned or delayed), except that a Party may (a) once a press release, public statement or other public statement has been made as permitted under the terms of this Agreement, make subsequent public disclosure of the information contained in such press release, publication or other public statement so long as such information remains true, correct and current, (b) make a disclosure expressly permitted in accordance with this Article 10 (Confidentiality and Publication), and

(c) make any such other disclosure that is, in the opinion of the Receiving Party's counsel, required by applicable Law, including by the rules or regulations of the United States Securities and Exchange Commission or similar regulatory agency in a country other than the United States or of any stock exchange or listing entity on which securities of the Receiving Party are listed, *provided* that, solely with respect to clause (c), the Party issuing such press release, public announcement or other public disclosure gives reasonable prior written notice to the other Party of and the opportunity to comment on such press release, public announcement or other public disclosure will submit the same in writing to the other Party as far in advance as reasonably practicable (and in no event less than [**] prior to the anticipated date of disclosure, unless such proposed disclosure is required under applicable Law or the rules of an applicable securities exchange, in each case, to be made in less than [**]) so as to provide the Disclosing Party a reasonable opportunity to comment thereon.

11. REPRESENTATIONS, WARRANTIES AND COVENANTS

11.1 Mutual Representations and Warranties as of the Execution Date and Effective Date. Each Party represents and warrants to the other Party that, as of the Execution Date and the Effective Date:

11.1.1 such Party is a corporation duly organized, validly existing and in good standing under the laws of its jurisdiction of incorporation or formation;

11.1.2 such Party has all requisite corporate power and corporate authority to enter into this Agreement and to carry out its obligations under this Agreement;

11.1.3 all requisite corporate action on the part of such Party, its directors and stockholders required by applicable Law for the authorization, execution and delivery by such Party of this Agreement, and the performance of all obligations of such Party under this Agreement, has been taken;

11.1.4 the execution, delivery and performance of this Agreement have been duly authorized by all necessary corporate action, and compliance with the provisions of this Agreement, by such Party do not and will not: (a) violate any provision of applicable Law or any ruling, writ, injunction, order, permit, judgment, determination, award or decree of any Governmental Authority, (b) constitute a breach of, or default under (or an event which, with notice or lapse of time or both, would become a default under) or conflict with, or give rise to any right of termination, cancellation or acceleration of, any agreement, arrangement, contractual obligation or instrument, whether written or oral, by which such Party or any of its assets are bound, or (c) violate or conflict with any of the provisions of such Party's organizational documents (including any articles or memoranda of organization or association, charter, bylaws or similar documents); and

11.1.5 except for any filings that may be required to comply with Antitrust Law, no consent, approval, authorization, license, exemption or other order of, or filing or registration with, or notice to, any Governmental Authority or other Third Party is required or will be necessary to be obtained or made by such Party for, or in connection with the authorization, execution and delivery by such Party of this Agreement or any other agreement or instrument executed in connection herewith, or for the performance by such Party of its obligations under this Agreement and such other agreements;

11.1.6 this Agreement is a legal, valid, and binding obligation of such Party enforceable against it in accordance with its terms and conditions, subject to the effects of bankruptcy, insolvency, or other laws of general application affecting the enforcement of creditor rights, judicial principles affecting the availability of specific performance, and general principles of equity (whether enforceability is considered a proceeding at law or equity);

11.1.7 such Party is not under any obligation, contractual or otherwise, to any Person that conflicts with or is inconsistent in any material respect with the terms of this Agreement;

11.1.8 neither party nor any of its employees nor to its knowledge, any of the agents performing hereunder, has ever been, is currently, or is the subject of a proceeding that could lead to it or such employees or agents becoming, as applicable, a Debarred Entity or Debarred Individual, an Excluded Entity or Excluded Individual or a Convicted Entity or Convicted Individual. For purposes of this provision, the following definitions shall apply:

11.1.8.1 A "**Debarred Individual**" is an individual who has been debarred by the FDA pursuant to 21 U.S.C. §335a (a) or (b) from providing services in any capacity to a Person that has an approved or pending drug or biological product application.

11.1.8.2 A "**Debarred Entity**" is a corporation, partnership or association that has been debarred by the FDA pursuant to 21 U.S.C. §335a (a) or (b) from submitting or assisting in the submission of any abbreviated drug application, or a subsidiary or Affiliate of a Debarred Entity.

11.1.8.3 An "**Excluded Individual**" or "**Excluded Entity**" is (i) an individual or entity, as applicable, who has been excluded, debarred, suspended or is otherwise ineligible to participate in federal health care programs such as Medicare or Medicaid by the Office of the Inspector General (OIG/HHS) of the U.S. Department of Health and Human Services, or (ii) is an individual or entity, as applicable, who has been excluded, debarred, suspended or is otherwise ineligible to participate in federal procurement and non-procurement programs, including those produced by the U.S. General Services Administration (GSA).

11.1.8.4 A "**Convicted Individual**" or "**Convicted Entity**" is an individual or entity, as applicable, who has been convicted of a criminal offense that falls within the ambit of 21 U.S.C. §335a (a) or 42 U.S.C. §1320a - 7(a), but has not yet been excluded, debarred, suspended or otherwise declared ineligible.

11.2 **Representations and Warranties of Sage as of the Execution Date and Effective Date**. Sage represents and warrants to Biogen that, as of the Execution Date and the Effective Date:

11.2.1 to the knowledge of Sage, the Principal Mode of Action for (a) the SAGE-217 molecule described on Schedule 1.1.261, (b) the SAGE-324 molecule described on Schedule 1.1.262, and (c) the SAGE-[**] molecule described on Schedule 1.1.260, in each case ((a)–(c)), is positive allosteric modulation of the GABAA Receptor;

11.2.2 (a) Sage or one of its Affiliates is the sole and exclusive owner or exclusive licensee of the Sage Licensed Technology in the Field, and (b) to Sage's knowledge: (i) Sage owns or has the right to use all Sage Technology necessary to conduct the activities under this Agreement with respect to the Sage Molecules and Licensed Products (for each, as it exists as of the Execution Date or the Effective Date, as applicable); and (ii) the Development or Commercialization, as contemplated as of the Execution Date or the Effective Date, as applicable, of any Sage Molecule or Licensed Products will not conflict with any other license or agreement to which Sage or any of its Affiliates is a party;

11.2.3 none of the issued Sage Licensed Patents existing as of the Execution Date or the Effective Date, as applicable, have been adjudged, in a final and non-appealable decision, invalid, unenforceable or unpatentable in whole or part by any Governmental Authority of competent jurisdiction,

and to the knowledge of Sage, all such issued Sage Licensed Patents existing as of the Execution Date and the Effective Date are valid and enforceable;

11.2.4 to the knowledge of Sage, the Development, Manufacture and Commercialization, each as contemplated by Sage and its Affiliates as of the Execution Date or the Effective Date, as applicable, of, respectively, the Licensed 217 Products and the Licensed 324 Products (for each, as such product exists as of the Execution Date or Effective Date, as applicable) in the Field in the Territory does not infringe, misappropriate or otherwise violate any valid and enforceable issued Patent or any other intellectual property right of any Third Party; and no written claim has been filed, or to Sage's knowledge, is or has been threatened in writing, against it by any Third Party alleging that the conception, development, or reduction to practice of the Sage Licensed Technology existing as of the Execution Date or the Effective Date, as applicable, owned by Sage involve the misappropriation of trade secrets or other violation of the rights or property of any Person;

11.2.5 (a) the Sage Licensed Technology (including the Sage Licensed Patents listed on Schedule 1.1.268 (Sage Licensed Patents as of the Execution Date)) constitutes all of the Patents and Know-How Controlled by Sage or any of its Affiliates that are necessary for the Development, Manufacture or Commercialization, each as contemplated by Sage and its Affiliates as of the Execution Date or the Effective Date, as applicable, of, respectively, the Licensed 217 Products and the Licensed 324 Products (for each, as such product exists as of the Execution Date or the Effective Date, as applicable) in the Field in the Territory; (b) as of the Execution Date, Sage does not own or hold rights to any Patents that would otherwise qualify as a Sage Licensed Patent but for the fact that Sage does not Control such Patent; and (c) except as otherwise noted on Schedule 1.1.268 (Sage Licensed Patents as of the Execution Date), Sage exclusively owns all rights, title and interests in and to all Sage Licensed Patents existing as of the Execution Date or the Effective Date, as applicable;

11.2.6 to Sage's knowledge, the Sage Licensed Patents with respect to which Sage controls Prosecution and Maintenance activities, have been prosecuted in the respective patent offices in the Territory in accordance with applicable Law;

11.2.7 (a) all fees required to be paid in order to maintain a Patent in any jurisdiction where a Sage Licensed Patent has issued and with respect to which Sage controls Prosecution and Maintenance activities have been timely paid, and (b) to Sage's knowledge, all fees required to be paid in order to maintain a Patent in any jurisdiction where any other Sage Licensed Patent has issued have been timely paid, and to Sage's knowledge, the Sage Licensed Patents that have issued are subsisting, valid and enforceable;

11.2.8 the inventorship of the Sage Licensed Patents is properly identified on each issued Patent or Patent application (in the form such patent application exists as of the Execution Date or the Effective Date, as applicable) within the existing Sage Licensed Patents;

11.2.9 Sage has not previously assigned, transferred, conveyed or granted any license or other rights under the Sage Licensed Technology that would conflict with or limit the scope of any of the rights or licenses granted to Biogen hereunder;

11.2.10 Sage's rights, title and interests to all Sage Licensed Technology are free of any lien or security interest;

11.2.11 Sage has conducted, and to Sage's knowledge, its contractors and consultants have conducted, all Development and Manufacturing of the Sage Molecules in all material respects in accordance with applicable Law;

11.2.12 Sage has obtained, or caused its Affiliates, as applicable, to have obtained, assignments from the inventors of any issued Patents within the Sage Licensed Technology, of all inventorship rights to such issued Patents within the Sage Licensed Technology, and, to Sage's knowledge, all such assignments are valid and enforceable;

11.2.13 except for Existing Sage Agreements, there are no Third Party agreements pursuant to which Sage is granted an exclusive license under or otherwise Controls any Patents or Know-How included in the Sage Licensed Technology, and no Third Party has any rights, title or interests in or to, or any license under, any such Sage Licensed Technology that would conflict with the rights and licenses granted to Biogen hereunder;

11.2.14 Schedule 1.1.110 (Existing Sage Agreements and Provisions) contains a true and complete list of all Existing Sage Agreements, and Sage has provided Biogen with a redacted copy of each Existing Sage Agreements, and each such agreement is in full force and effect, and no written notice of default or termination has been received or given under any such agreement, and, to Sage's knowledge, there is no act or omission by Sage or its Affiliates that would provide a right to terminate any such agreement;

11.2.15 Sage and its Affiliates have taken commercially reasonable measures consistent with industry practices to protect the secrecy, confidentiality and value of all Sage Licensed Know-How that constitutes trade secrets under applicable Law (including requiring all employees, consultants and independent contractors to execute binding and enforceable agreements requiring all such employees, consultants, and independent contractors to maintain the confidentiality of such Sage Licensed Know-How), and, to Sage's knowledge, such Sage Licensed Know-How has not been used or disclosed to any Third Party except pursuant to such confidentiality agreements, and to Sage's knowledge, there has not been a material breach by any party to such confidentiality agreements;

11.2.16 Sage has furnished or made available to Biogen (a) all information requested by Biogen in connection with the due diligence process, (b) all material safety and efficacy data, and (c) all material Regulatory Materials and other material correspondence with Regulatory Authorities, in each case ((a) through (c)), concerning the Sage Molecules, the Licensed Products (in each case in the form being Developed by Sage or any of its Affiliates as of the Execution Date or the Effective Date, as applicable) and the Sage Licensed Technology. To the knowledge of Sage, all such information and data, Regulatory Materials and other correspondence with Regulatory Authorities is accurate, complete and true in all material respects;

11.2.17 except as set forth in Schedule 11.2.17 (Proceedings), no Proceeding, settlement, arbitration, citation, summons, or subpoena of any nature, civil, criminal, regulatory or otherwise, in law or in equity, has been brought or obtained, is pending, or, to the knowledge of Sage, threatened, against Sage or any of its Affiliates or relating to any of the Sage Licensed Technology, including: (a) challenging the ownership, scope, duration, validity, enforceability, priority or right to the Sage Licensed Patents (including, by way of example, through the institution of or written threat of institution of interference, *inter partes* review, reexamination, protest, opposition, nullity, or similar invalidity proceeding before the United States Patent and Trademark Office or any foreign patent authority or court), (b) challenging or seeking to deny or restrict, any rights of Sage or any of its Affiliates in any Sage Licensed Technology and not already covered by clause (a), or (c) alleging that the use of any Sage Licensed Technology, or the disclosing, copying, making, or licensing of the Sage Licensed Technology, or the Development, Manufacture or Commercialization of the Sage Molecules or Licensed Products as contemplated herein, does or will misappropriate, infringe or otherwise violate, conflict with or interfere with any issued Patents or other intellectual property or proprietary right of any Third Party; *provided*, *however*, that, "Proceeding" for purposes of the representations and warranties of clauses (a) and (b) excludes office actions or similar

communications issued by any patent office or comparable registration authority in the ordinary course of prosecution of any patent application within the Sage Licensed Patents; and

11.2.18 to the knowledge of Sage, no Person is infringing or threatening to infringe or misappropriating or threatening to misappropriate or otherwise violating or threatening to violate Sage Licensed Technology, or has infringed, misappropriated or otherwise violated any Sage Licensed Technology in the Field in the Territory.

11.3 **Warranty Disclaimer**. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THIS AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATION OR EXTENDS ANY WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE, AND EACH PARTY SPECIFICALLY DISCLAIMS ANY OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, EXPRESS OR IMPLIED, TO THE OTHER PARTY WITH RESPECT TO ANY PATENTS, INFORMATION, KNOW-HOW, OTHER INTELLECTUAL PROPERTY, MATERIALS, LICENSED PRODUCTS, GOODS, SERVICES, RIGHTS OR OTHER SUBJECT MATTER OF THIS AGREEMENT AND HEREBY DISCLAIMS ALL IMPLIED WARRANTIES OF QUALITY, MERCHANTABILITY, NONINFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ANY AND ALL OF THE FOREGOING. EACH PARTY HEREBY DISCLAIMS ANY REPRESENTATION OR WARRANTY THAT THE DEVELOPMENT, MANUFACTURE OR COMMERCIALIZATION OF ANY LICENSED PRODUCT PURSUANT TO THIS AGREEMENT WILL BE SUCCESSFUL.

11.4 **Certain Covenants**.

11.4.1 *Compliance*. Each Party and its Related Parties will conduct all activities under this Agreement, including the Development, Manufacture, performance of Medical Affairs Activities and Commercialization of the Licensed Products in the Territory, in accordance in all material respects with all applicable Laws.

11.4.2 *No Debarment*. Each Party will use reasonable efforts to not use, in any capacity in connection with the exercise of its rights or the performance of its obligations under this Agreement, any Person that has been debarred pursuant to Section 306 of the FD&C Act, as amended, or that is the subject of a conviction described in such section. Each Party agrees to inform the other Party in writing immediately if it or any Person that is performing activities under this Agreement, is debarred or is subject to debarment or is the subject of a conviction described in Section 306 of the FD&C Act, or if any Proceeding is pending or, to the best of the notifying Party's knowledge, is threatened, relating to the debarment or conviction of the notifying Party or any Person or entity used in any capacity by such Party or any of its Affiliates in connection with the exercise of its rights or the performance of its obligations under this Agreement.

11.4.3 *Conflicting Transactions*. During the Term, Sage will not, and will cause its Affiliates not to, enter into any agreement (or amend any agreement that Sage is a party to as of the Execution Date) granting any license or other right under any Sage Licensed Technology that is inconsistent with this Agreement. During the Term, Biogen will not, and will cause its Affiliates not to, enter into any agreement (or amend any agreement that Biogen is a party to as of the Execution Date) granting any license or other right under the Biogen Background Technology, Biogen Collaboration Technology or Biogen's interest in the Joint Collaboration Technology that is inconsistent with this Agreement.

11.5 Additional Covenants of the Parties.

11.5.1 Sage will not assign, transfer, convey or grant any license or other rights to its rights, title and interests in or to the Sage Licensed Technology or any Sage Molecule that would conflict with or limit the scope of any of the options, rights or licenses granted to Biogen under this Agreement, and Sage and its Affiliates will remain the sole and exclusive owner or exclusive licensee, as applicable, of the Sage Licensed Technology in the Field in the Territory. Biogen will retain Control of the Biogen Licensed Technology incorporated into any Licensed Product so as not to materially and adversely affect the rights granted to Sage under this Agreement.

11.5.2 Sage will not, directly or indirectly, alone, with or through any other Person, cause, induce, assist, authorize, or otherwise participate in any Proceeding against Biogen or its Affiliates based upon any assertion of direct or indirect infringement, due to Biogen or its Affiliates' performance of its or their permitted activities under this Agreement, of any Patents that are Controlled by Sage or any of its Affiliates (solely or jointly with any Third Party) that would be Sage Licensed Patents but for Sage's failure to use the subject matter claimed in such Patents at any time during the Term by Sage or any of its Affiliates in connection with the performance of any of the Joint Program Activities for a Licensed Product.

11.5.3 Except with respect to any Securitization Transaction entered into by Sage in accordance with Section 15.1.2 (Securitization), Sage will not, and will cause its Affiliates not to incur or permit to exist, with respect to any Sage Licensed Technology, any lien, encumbrance, charge, security interest, mortgage, liability, or other restriction (including in connection with any indebtedness) that would conflict with any of the rights or licenses granted to Biogen under this Agreement.

11.5.4 with respect to any Existing Sage Agreement or In-License Agreement entered into by Sage or its Affiliates after the Execution Date and to the extent relevant to the Profit-Share Territory, and with respect to any In-License Agreement entered into by Biogen or its Affiliates after the Execution Date: (a) such Party will not breach any such agreement in a manner that would give rise to the right of any Third Party to terminate such agreement; (b) such Party will promptly notify the other of any such breach by such Party or a Third Party of any such agreement, in each case, of which such Party is aware; and (c) in the event of any such breach by such Party that is not cured within [**] after written notice to the other, (i) such Party will permit the other to cure such breach on such Party's behalf upon the other's reasonable written request, and (ii) the other may offset any reasonable amounts paid to cure such breach against amounts otherwise payable by the other to such Party under this Agreement;

11.5.5 neither Party will amend, modify or terminate, in the case of Sage, any Existing Sage Agreement or In-License Agreement entered into by Sage or its Affiliates after the Execution Date, or, to the extent relevant to the Profit-Share Territory in the case of Biogen, any In-License Agreement entered into by Biogen or its Affiliates after the Execution Date, in a manner that would adversely affect the other Party's rights or licenses under this Agreement without first obtaining such other Party's written consent, which consent may be withheld in such other Party's sole discretion; and

11.5.6 if a Party, or any of its employees (and to the extent a Party is aware of the situation, its agents performing hereunder), became, become or are the subject of a proceeding that could lead to a Person becoming, as applicable, a Debarred Entity or Debarred Individual, an Excluded Entity or Excluded Individual or a Convicted Entity or Convicted Individual, such Party shall promptly notify the other Party, and such other Party shall have the option, at its sole discretion, to prohibit such Person from performing work under this Agreement.

11.6 [**].

11.7 Exclusivity.

11.7.1 *Exclusivity*.

11.7.1.1 *Sage*. Subject to Sections [**] during the Term, Sage will not, and will cause its Affiliates not to (a) alone or with any Affiliates or Third Parties Develop, Manufacture, perform Medical Affairs Activities with respect to or Commercialize a Competing Product in the Field in the Territory, or (b) enter into an agreement or other arrangement with any Third Party pursuant to which Sage or one of its Affiliates grants such Third Party any license or other rights to Develop, Manufacture, perform Medical Affairs Activities with respect to or Commercialize a Competing Product, in each case, in the Field in the Territory.

11.7.1.2 *Biogen*. Subject to Sections [**], during the Term, Biogen will not, and will cause its Affiliates not to (a) alone or with any Affiliates or Third Parties Develop, Manufacture, perform Medical Affairs Activities with respect to or Commercialize a Competing Product in the Field in the Territory, or (b) enter into an agreement or other arrangement with any Third Party pursuant to which Biogen or one of its Affiliates grants such Third Party any license or other rights to Develop, Manufacture, perform Medical Affairs Activities with respect to or Commercialize a Competing Product in the Field in the Territory.

11.7.1.3 *[**]*. Notwithstanding Section 11.7.1 (Exclusivity), in the event that

[**]

11.7.2 *[**]*. Notwithstanding Section 11.7.1 (Exclusivity), in the event that,

[**]

11.7.3 *[**]*. For the avoidance of doubt, and notwithstanding anything in this Agreement to the contrary, nothing in this Section 11.7.1 (Exclusivity) [**], *provided* that, [**].

12. INDEMNIFICATION; LIMITATION OF LIABILITY; INSURANCE

12.1 General Indemnification by Biogen. Biogen will indemnify, hold harmless and defend each of Sage, its Related Parties, and their respective directors, officers, employees and agents ("**Sage Indemnitees**") from and against any and all losses, liabilities, damages, costs, fees and expenses (including reasonable attorneys' fees and litigation expenses) (collectively, "**Losses**") incurred in connection with Third Party claims, investigations, demands or suits ("**Third Party Claims**") incurred by or rendered against the Sage Indemnitees after the Effective Date to the extent arising out of or resulting from (a) any breach of this Agreement, including any breach of a representation or warranty made by Biogen in this Agreement, or any breach or violation of any covenant or agreement of Biogen in this Agreement, (b) the gross negligence, reckless conduct or willful misconduct by or on the part of Biogen or any of its Affiliates, or any of their respective directors, officers, employees or agents in the performance of Biogen's or their obligations under this Agreement, or (c) the Development, Manufacture, performance of Medical Affairs Activities with respect to or Commercialization of Licensed Products by or on behalf of Biogen or any of its Related Parties in the Biogen Territory pursuant to this Agreement. Notwithstanding the foregoing, Biogen will have no obligation to indemnify any of the Sage Indemnitees to the extent that any Losses arise out of or result from any matters for which Sage is obligated to indemnify the Biogen Indemnitees under Section 12.2 (General Indemnification by Sage).

12.2 **General Indemnification by Sage**. Sage will indemnify, hold harmless, and defend each of Biogen, its Related Parties and their respective directors, officers, employees and agents ("**Biogen Indemnitees**") from and against any and all Losses incurred in connection with Third Party Claims incurred by or rendered against the Biogen Indemnitees after the Effective Date to the extent arising out of or resulting from (a) any breach of this Agreement, including any breach of a representation or warranty made by Sage in this Agreement, or any breach or violation of any covenant or agreement of Sage in this Agreement, (b) the gross negligence, reckless conduct or willful misconduct by or on the part of Sage or any of its Affiliates, or any of and their respective directors, officers, employees or agents in the performance of Sage's obligations under this Agreement, (c) the Development, Manufacture, performance of Medical Affairs Activities with respect to or Commercialization of Licensed 217 Products in the Existing Partner Territory whether before, after or during the Term, (d) the Development, Manufacture or Commercialization by or on behalf of Sage or any of its Related Parties (excluding such conduct by or on behalf of Biogen, is Affiliates and its Sublicensees as licensees or sublicensees of Sage hereunder) of any Licensed Product in the Territory whether before or after the Term, or (e) the conduct of the [**] by or on behalf of Sage or any of its Related Parties. Notwithstanding the foregoing, Sage will have no obligation to indemnify any of the Biogen Indemnitees to the extent that any Losses arise out of or result from, directly or indirectly, any matters for which Biogen is obligated to indemnify the Sage Indemnitees under Section 12.1 (General Indemnification by Biogen).

12.3 **Indemnification Procedure**. Each Party will notify the other Party in writing in the event it becomes aware of a Third Party Claim for which indemnification may be sought hereunder. The Party entitled to indemnification under Section 12.1 (General Indemnification by Biogen) or 12.2 (General Indemnification by Sage) (an "**Indemnified Party**") will notify the Party potentially responsible for such indemnification (the "**Indemnifying Party**") in writing promptly upon being notified of or having knowledge of any Third Party Claim asserted or threatened against the Indemnified Party that could give rise to a right of indemnification under this Agreement; *provided* that the failure to give such notice will not relieve the Indemnifying Party of its indemnity obligation hereunder except to the extent that such failure materially prejudices the Indemnifying Party. The Indemnifying Party and the Indemnified Party will meet to discuss how to respond to any Third Party Claim. The Indemnified Party will cooperate fully with the Indemnifying Party in defense of such Third Party Claim. In any such proceeding, the Indemnified Party will have the right to retain its own counsel, but the fees and expenses of such counsel will be at the expense of the Indemnified Party unless (a) the Indemnifying Party and the Indemnified Party will have agreed to the retention of such counsel or (b) the named parties to any such proceeding (including any impleaded parties) include both the Indemnifying Party and the Indemnified Party and representation of both Parties by the same counsel would be inappropriate due to actual or potential differing interests between them. All such fees and expenses of the Indemnified Party by application of the foregoing clause (a) or (b) will be reimbursed by the Indemnifying Party as they are incurred. The Indemnifying Party will not be liable for any settlement of any proceeding effected without its written consent, but, if settled with such consent or if there is a final judgment for the Third Party plaintiff, then the Indemnifying Party agrees to indemnify the Indemnified Party from and against any Losses by reason of such settlement or judgment. The Indemnifying Party will not, without the written consent of the Indemnified Party (such consent not to be unreasonably withheld, conditioned or delayed), effect any settlement of any pending or threatened proceeding in respect of which the Indemnified Party is, or could have been, a party and indemnity could have been sought hereunder by the Indemnified Party, unless such settlement includes an unconditional release of the Indemnified Party from all liability on claims that are the subject matter of such proceeding.

12.4 **Certain Third Party Claims Related to Licensed Products in the Profit-Share Territory**. If either Party receives notice of a Third Party Claim that is incurred from or is based on any Joint Program Activities, then such Party will inform the other Party in writing as soon as reasonably practicable, and the Parties will discuss a strategy on how to, and which Party will, defend against such Third Party Claim. Any Losses as they are incurred in connection with any such Third Party Claim, as well

as any reasonable attorneys' fees and costs of litigation incurred by either Party (or any of its Indemnified Persons), in each case, that are Joint Program Damages (a) incurred by either Party (or any of its Indemnified Persons) during the Term, [**], and (b) incurred by either Party (or any of its Indemnified Persons) after the Term for such Product Class, in each case ((a) and (b)), will be shared such that fifty percent (50%) thereof are borne by Sage and fifty percent (50%) thereof are borne by Biogen, and the Party (or any of its Indemnified Persons) that has incurred such Joint Program Damages will be reimbursed by the other Party such other Party's fifty percent (50%) share no later than [**] after receipt of reasonable documentation evidencing such amounts.

12.5 **Limitation of Liability**. NEITHER PARTY WILL BE LIABLE FOR SPECIAL, INCIDENTAL, EXEMPLARY, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING LOSS OF PROFITS OR BUSINESS INTERRUPTION (TO THE EXTENT THE SAME ARE CONSEQUENTIAL DAMAGES), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, BREACH OF STATUTORY DUTY OR OTHERWISE IN CONNECTION WITH OR ARISING OUT OF THIS AGREEMENT, THE TRANSACTIONS CONTEMPLATED HEREBY, OR THE EXERCISE OF ITS RIGHTS OR THE PERFORMANCE OF ITS OBLIGATIONS HEREUNDER, INCLUDING THE USE OF A LICENSED PRODUCT, REGARDLESS OF ANY NOTICE OF SUCH DAMAGES, EXCEPT AS A RESULT OF (A) A PARTY'S FRAUD, GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, (B) A PARTY'S BREACH OF ITS CONFIDENTIALITY OBLIGATIONS UNDER ARTICLE 10 (CONFIDENTIALITY AND PUBLICATION), OR (C) A PARTY'S BREACH OF ITS OBLIGATIONS UNDER SECTION 11.7 (EXCLUSIVITY). NOTHING IN THIS SECTION 12.5 (LIMITATION OF LIABILITY) IS INTENDED TO LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY UNDER THIS ARTICLE 12 (INDEMNIFICATION; LIMITATION OF LIABILITY; INSURANCE).

12.6 **Insurance**. Each Party will obtain and maintain insurance with a reputable, solvent insurer in an amount appropriate for its business and products of the type that are the subject of this Agreement, and for its obligations under this Agreement. Specifically, prior to (a) a Party conducting a Clinical Study of any Licensed Product, such Party will obtain product liability insurance with a limit of at least [**] Dollars ($[**]) and will maintain such insurance throughout the conduct of Clinical Studies of such Licensed Product and for at least [**] thereafter, and (b) the First Commercial Sale of a Licensed Product by a Party or any of its Related Parties, such Party will obtain product liability insurance with a limit of at least [**] Dollars ($[**]) and will maintain such insurance for at least until [**] after the last commercial sale of such Licensed Product by such Party or any of its Related Parties. Such limits to be per occurrence and in annual aggregate. It is understood that such insurance will not be construed to create a limit of either Party's liability with respect to its indemnification obligations under this Article 12 **(**Indemnification; Limitation of Liability; Insurance**)**. Upon request, each Party will provide the other Party with evidence of the existence and maintenance of such insurance coverage. Notwithstanding any provision to the contrary set forth in this Agreement, Biogen may self-insure, in whole or in part, the insurance requirements described above.

13. INTELLECTUAL PROPERTY

13.1 Inventorship.

13.1.1 *Determination of Inventorship*. Inventorship for inventions and discoveries (including Know-How) first developed or conceived during the course of the performance of activities under this Agreement will be determined in accordance with United States patent Laws for determining inventorship.

13.1.2 *JRA Exception*. Notwithstanding anything to the contrary in this Agreement, each Party will have the right to invoke the America Invents Act Joint Research Agreement exception codified at 35 U.S.C. § 102(c) (the "**JRA Exception**") when exercising its rights under this Agreement only with prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed) and neither Party may invoke the JRA Exception without the prior written consent of the other Party. If the Parties agree to invoke the JRA Exception through the IP Committee, the Parties will cooperate and coordinate their respective activities with such Party with respect to any filings or other activities in support thereof. The Parties acknowledge and agree that this Agreement is a "joint research agreement" as defined 35 U.S.C. § 100(h).

13.2 **Ownership**.

13.2.1 As between the Parties, all [**].

13.2.2 Each Party will have an equal and undivided joint ownership interest in and to the Joint Collaboration Technology. Each Party may exercise its ownership rights in and to such Joint Collaboration Technology, including the right to license and sublicense or otherwise to exploit, transfer or encumber its ownership interest, without an accounting or obligation to, or consent required from, the other Party, but subject to the licenses granted under this Agreement and the other terms and conditions of this Agreement. At the reasonable written request of a Party, the other Party will grant such written consents and confirm that no such accounting is required to effect the foregoing regarding Joint Collaboration Technology.

13.3 **Disclosure of Inventions**. The Parties will promptly disclose in writing to each other any Collaboration Technology developed or conceived during the Term, but no later than [**] after the applicable Party's intellectual property department receives notice of such development or conception.

13.4 **Prosecution and Maintenance of Patents**.

13.4.1 *IP Committee*.

13.4.1.1 *Composition*. The IP Committee will comprise [**] of each Party, with at least [**] who is an employee of each Party. Each Party will appoint its respective representatives to the IP Committee within [**] after the Effective Date, and from time to time, may substitute one or more of its representatives, in its sole discretion, effective upon notice to the other Party of such change. All IP Committee representatives will have appropriate expertise, seniority, decision making authority and ongoing familiarity with the activities performed under this Agreement and each Party's representatives collectively will have relevant expertise in intellectual property portfolio management and licensing matters. Additional representatives or consultants may from time to time, be invited to attend IP Committee meetings, subject to such representatives and consultants (or the representative's or consultant's employer) undertaking confidentiality and non-use obligations, whether in a written agreement or by operation of law, no less stringent than the requirements of Article10 (Confidentiality and Publication).

13.4.1.2 *Meetings*. The IP Committee will meet as frequently as necessary to carry out its duties under Section 13.4.1.3 (IP Committee Responsibilities), but no more often than [**], unless otherwise agreed by its members. The IP Committee will meet in person at locations in Massachusetts alternately selected by Sage and by Biogen or at any other location agreed by the members or, alternatively, by means of teleconference, videoconference, or other similar communications equipment. Meetings of the IP Committee will be effective only if a quorum is present, which quorum will require the presence of at least one (1) representative of each Party.

Each Party will bear the expense of its respective IP Committee members' participation in IP Committee meetings.

13.4.1.3 *IP Committee Responsibilities*. The IP Committee will have the following responsibilities:

(a) discussing and determine whether to approve the Prosecution and Maintenance strategy of the Sage Prosecuted Patents and the Biogen Prosecuted Patents in the Territory and the Existing Partner Territory (as may be updated in accordance with this Agreement, the "**PM Strategy**" and any update thereto);

(b) overseeing the implementation of the PM Strategy in the Territory or the Existing Partner Territory and facilitating the exchange of information between the Parties regarding the foregoing, as described in Section 13.4 (Prosecution and Maintenance of Patents);

(c) serving as a forum for the Parties to discuss strategy for and actions to be taken with respect to any Competitive Infringement, Third Party Action or Post-Grant Proceeding, as described in Section 13.5 (Third Party Infringement, Defense and Post-Grant Proceedings);

(d) discussing the strategy for listing patents in the Orange Book maintained by the FDA or similar or equivalent patent listing or linking source, if any, in other countries in the Territory or the Existing Partner Territory for the Licensed Products, as described in Section 13.7 (Orange Book Listings); and

(e) determining whether to approve and otherwise providing input regarding any other matters that the Parties agree in writing will be the responsibility of the IP Committee.

13.4.1.4 *Decision Making*. The IP Committee will endeavor to reach decisions by consensus, with each Party, through its representative members of the IP Committee, having one (1) vote. Approvals of each respective applicable IP Committee matter will require the unanimous agreement of the representatives. If the IP Committee cannot reach unanimous agreement on a matter that comes before it within [**] of the meeting where such issue was raised and over which the IP Committee has oversight, then the Parties will refer such issue for resolution to the IP Heads. If a matter is referred to the IP Heads under this Section 13.4.1.4 (Decision Making), then the IP Committee will submit in writing to their respective IP Heads the respective positions of the Parties. Such IP Heads will use good faith efforts to resolve such matter promptly, which good faith efforts will include at least one (1) meeting between such IP Heads within [**] after the IP Committee has submitted the Parties' respective positions on such matter to the IP Heads. If the IP Heads are unable to reach unanimous agreement on any such matter within [**] (or such other period of time as is required to comply with applicable Law so as not to waive any applicable statutory rights) of the meeting between the IP Heads, then no action will be taken as to the escalated matter until a joint decision can be made by the Parties, except that (a) with respect to any Prosecution and Maintenance matter, [**] will have the final decision-making authority, (b) with respect to any enforcement, defense or Post-Grant Proceedings matter, [**] will have final decision-making authority, (c) with respect to any listing of patents in the Orange Book or similar or equivalent patent listing or linking requirement, if any, in other countries in the Territory as described in Section 13.7 (Orange Book Listings), [**] will have final decision-making authority, and (d) subject to the terms of this Article 13 (Intellectual Property), solely with respect to any dispute as

between the Parties in the determination of inventorship, validity, scope or enforceability of any Collaboration Know-How or Collaboration Patents, [**].

13.4.1.5 *Term*. The Parties may terminate the IP Committee with respect to all Licensed Products in a Product Class upon the written agreement of the Parties.

13.4.2 *[**]*.

13.4.2.1 *General*. As between the Parties, [**] will have (a) the first right (but not the obligation) to implement the PM Strategy approved by the IP Committee in the Prosecution and Maintenance of all [**] using counsel of [**] choosing (reasonably acceptable to [**]) in accordance with this Section 13.4.2 ([**]), and (b) the sole right (but not the obligation) to Prosecute and Maintain all [**] using counsel of [**] choosing in its sole discretion (such Patents in clauses (a) and (b), collectively, the "**[**]**"). Subject to Section 13.4.4 (Patent Cost Sharing), [**] will bear all Patent Costs incurred by [**] for such Prosecution and Maintenance of [**] will furnish to the IP Committee, via electronic mail or such other method as agreed by the Parties, copies of proposed filings and documents received from patent counsel in the course of Prosecuting and Maintaining the [**], or copies of documents filed with the relevant national patent offices or other Governmental Authorities with respect to [**], and such other material documents related to the Prosecution and Maintenance of the [**], in sufficient time prior to filing such document or making any payment due thereunder to allow for the IP Committee to review, discuss and determine whether to approve. The IP Committee will consider in good faith timely comments and recommendations made by Sage consistent with the PM Strategy approved by the IP Committee in connection with such review.

13.4.2.2 *[**] Step-In*. In the event that [**] elects not to Prosecute and Maintain (or continue to Prosecute and Maintain, including filing a Patent claiming priority to a Patent prior to its issuance) any [**] will notify [**] sufficiently in advance of the date on which any such [**] would become abandoned, no longer available or otherwise forfeited, whereupon so as not to waive any applicable statutory rights, at the written request of [**], the Parties will meet to discuss in good faith any such decision by [**]. Only in the event that such election not to Prosecute and Maintain (or continue to Prosecute and Maintain) such Patent is not taken for [**] ("**Strategic Prosecution Reasons**"), [**] will have the right (but not the obligation), at [**] sole discretion and, subject to Section 13.4.4 (Patent Costs Sharing), to assume sole responsibility for all applicable Patent Costs and to assume the Prosecution and Maintenance of such [**] and continue it in accordance with the PM Strategy approved by the IP Committee in, as applicable, [**] (which right will include the right to file additional Patents claiming priority to such [**] will thereafter consult with [**] via the IP Committee on [**] strategy for the Prosecution and Maintenance of any such assumed [**] will furnish to the IP Committee, via electronic mail or such other method as agreed by the Parties, copies of proposed filings and documents received from patent counsel in the course of Prosecuting and Maintaining any such assumed [**], or copies of documents filed with the relevant national patent offices or other Governmental Authorities with respect to any such assumed [**], and such other material documents related to the Prosecution and Maintenance of any such assumed [**], in sufficient time prior to filing such document or making any payment due thereunder to allow for the IP Committee to review, discuss and determine whether to approve. The IP Committee will consider in good faith timely comments and recommendations made by [**] consistent with the PM Strategy approved by the IP Committee in connection with such review. [**] will sign, or will use reasonable efforts to have signed, all legal documents as are reasonably necessary for [**] to assume the Prosecution and Maintenance of any such assumed [**] in, as the case may be, [**]. Notwithstanding any assumption of such Prosecution and Maintenance of any such assumed [**] in, as the case may be, [**], [**] will retain ownership of all right, title and

interest in and to such assumed [**] and such [**] will continue to be licensed to [**] under the licenses granted to [**] under this Agreement to the same extent as that prior to any such assumption of such Prosecution and Maintenance.

13.4.3 *[**].*

13.4.3.1 *General*. As between the Parties, [**] will have the first right (but not the obligation) to implement the PM Strategy approved by the IP Committee in the Prosecution and Maintenance of all [**] using counsel of [**] choosing (reasonably acceptable to [**]) (such Patents in, collectively, the "**[**]**") in accordance with this Section 13.4.3 ([**]). Subject to Section 13.4.4 (Patent Costs Sharing), [**] will bear all Patent Costs incurred by [**] for such Prosecution and Maintenance of the [**] will furnish to the IP Committee, via electronic mail or such other method as agreed by the Parties, copies of proposed filings and documents received from patent counsel in the course of Prosecuting and Maintaining the [**], or copies of documents filed with the relevant national patent offices or other Governmental Authorities with respect to the [**], and such other material documents related to the Prosecution and Maintenance of the [**], in sufficient time prior to filing such document or making any payment due thereunder to allow for the IP Committee to review, discuss and determine whether to approve. The IP Committee will consider in good faith timely comments and recommendations made by [**] consistent with the PM Strategy approved by the IP Committee in connection with such review. [**] will Prosecute and Maintain the [**] in good faith and in the best interest of maximizing the overall global intellectual property rights and claims Covering the applicable Licensed Product, in each case, without regard to any other [**] product or intellectual property right that is not licensed to [**] under this Agreement.

13.4.3.2 *[**] Step-In*. In the event that [**] elects not to Prosecute and Maintain (or continue to Prosecute and Maintain, including filing a Patent claiming priority to a Patent prior to its issuance), any [**] will notify [**] sufficiently in advance of the date on which any such [**] would become abandoned, no longer available or otherwise forfeited so as not to waive any applicable statutory rights, whereupon, at the written request of [**], the Parties will meet to discuss in good faith any such decision by [**]. Only in the event that such election not to Prosecute and Maintain (or continue to Prosecute and Maintain) such Patent is not taken for Strategic Prosecution Reasons, [**] will have the right (but not the obligation), at [**] sole discretion and, subject to Section 13.4.4 (Patent Costs Sharing), to assume sole responsibility for all applicable Patent Costs and to assume such Prosecution and Maintenance of such [**] in the name of [**] and continue it in accordance with the PM Strategy approved by the IP Committee in the Territory (which right will include the right to file additional Patents claiming priority to such [**] will thereafter consult with [**] via the IP Committee on [**] strategy for the Prosecution and Maintenance of any such assumed [**] will furnish to the IP Committee, via electronic mail or such other method as agreed by the Parties, copies of proposed filings and documents received from patent counsel in the course of Prosecuting and Maintaining any such assumed [**], or copies of documents filed with the relevant national patent offices or other Governmental Authorities with respect to any such assumed [**], and such other material documents related to the Prosecution and Maintenance of any such assumed [**], in sufficient time prior to filing such document or making any payment due thereunder to allow for the IP Committee to review, discuss and determine whether to approve. The IP Committee will consider in good faith timely comments and recommendations made by [**] consistent with the PM Strategy approved by the IP Committee in connection with such review. [**] will sign, or will use reasonable efforts to have signed, all legal documents as are reasonably necessary for [**] to assume the Prosecution and Maintenance of any such assumed [**]. Notwithstanding any assumption of such Prosecution and Maintenance of any such assumed [**] will retain ownership of all right, title and interest in and to such assumed [**] and such [**] will

continue to be licensed to [**] under the licenses granted to [**] under this Agreement to the same extent as that prior to any such assumption of such Prosecution and Maintenance.

13.4.4 *Patent Costs Sharing*. Notwithstanding any provision to the contrary in this Section 13.4 (Prosecution and Maintenance of Patents), unless and until Sage exercises an Opt-Out Right with respect to the Licensed Products in the same Product Class in accordance with Section 9.5 (Sage Opt-Out), the Patent Costs incurred by the Party controlling the Prosecution and Maintenance of any [**] with respect to such Product Class will be shared by the Parties (a) as Joint Development Costs pursuant to Section 3.4.1 (Profit-Share Territory) if such Patent Covers a Licensed Product in such Product Class and such Patent Costs were incurred prior to the First Commercial Sale of the first such Licensed Product Covered by such [**], as applicable, and (b) as Joint Commercialization Costs pursuant to Section 5.5.1 (Profit-Share Territory) if such Patent Covers a Licensed Product in such Product Class and such Patent Costs were incurred after the First Commercial Sale of the first such Licensed Product Covered by such [**], as applicable.

13.4.5 *Patent Miscellaneous*. Each Party hereby agrees: (a) to use reasonable efforts to make its employees, agents and consultants reasonably available to the other Party (or to the other Party's authorized attorneys, agents or representatives), to the extent reasonably necessary to enable such Party to undertake any Prosecution and Maintenance described in this Section 13.4 (Prosecution and Maintenance of Patents) and (b) to reasonably cooperate in any such Prosecution and Maintenance by the other Party.

13.5 Third Party Infringement, Defense and Post-Grant Proceedings.

13.5.1 *Notices*. Each Party will promptly report in writing to the other Party any Competitive Infringement of which such Party (or any of its Affiliates or Sublicensees) becomes aware and will provide the other Party with all available evidence of such Competitive Infringement in such Party's control; *provided*, *however*, that (a) for cases of Competitive Infringement under Section 13.5.2.2 (35 U.S.C. §271(e)(2) Infringement), such written notice will be given within [**] after the relevant personnel at the applicable Party become aware of such Competitive Infringement with a copy sent to the IP Heads, and (b) for cases of infringement as described in Section 13.5.2.3 (Notification of Patent Certification), such written notice will be given as specified in Section 13.5.2.3 (Notification of Patent Certification). Without limiting the last sentence of the definition of "Competitive Infringement", a notice under 21 U.S.C. §355(b)(2)(A)(iv) or 355(j)(2)(A)(vii)(IV) (however those sections may be amended) or any equivalent provision under applicable Law outside of the United States with respect to any Patents that are the subject of this Agreement will be deemed to describe an act of Competitive Infringement, regardless of its content.

13.5.2 *Rights to Enforce*.

13.5.2.1 *In the Territory*. [**] will have the first right (but not the obligation), at its sole discretion and sole cost and expense, through counsel of its choosing and reasonably acceptable to [**], as the Defending Party to seek to abate any Competitive Infringement of a Licensed Product in the Territory by enforcing, as applicable, any [**] Prosecuted Patent or [**] Collaboration Patent; *provided* that, if [**], the Parties will share equally all Patent Costs incurred by [**] for such enforcement to abate any Competitive Infringement of a Licensed Product in the Profit-Share Territory. If practicable under the circumstances, [**] will bring the Competitive Infringement matter to the IP Committee, within a reasonable time after the IP Heads have been notified of such matter pursuant to Section 13.5.1 (Notices), for discussion pursuant to Section 13.4.1.3(c) (IP Committee Responsibilities). Thereafter, [**] will notify the IP Committee of its decision as to whether it is taking any action in accordance with this Section 13.5.2.1 (In the Territory) at least [**] before any time limit set forth in an applicable Law or regulation, or within [**] after the relevant personnel at [**] has been notified of such Competitive Infringement (or as

otherwise agreed by the IP Committee), whichever is shorter. If [**] decides not to take such action with respect to any [**] Prosecuted Patent or [**] Collaboration Patent in the Territory, then [**] will so notify the IP Committee in writing, and, so long as [**] election not to take any such action is not due to [**] ("**Strategic Enforcement or Defense Reasons**"), following discussion of the IP Committee and consideration in good faith of any rationale provided by [**] as to why it elected not to take such action, [**], at its sole cost and expense, will have the right (but not the obligation) to exercise the rights set forth in Section 13.5.5.1 (Withdrawal, Cooperation and Participation) and become the Defending Party with respect to enforcing any [**] Prosecuted Patent or [**] Collaboration Patent, as applicable, to abate such Competitive Infringement of a Licensed Product in the Profit-Share Territory; *provided* that, if [**], then the Parties will share equally all Patent Costs incurred by [**] to abate any such Competitive Infringement of such Licensed Product in the Profit-Share Territory. For the avoidance of doubt, and notwithstanding anything in this Agreement to the contrary, [**] will have the sole and exclusive right (but not the obligation), at [**] sole discretion, to enforce any [**] Background Patent against a Competitive Infringement.

13.5.2.2 *35 U.S.C. § 271(e)(2) Infringement*. Notwithstanding anything to the contrary in this Section 13.5.2 (Rights to Enforce), for a Competitive Infringement under 35 U.S.C. § 271(e)(2), or its equivalent in a country other than the United States, [**] must notify the IP Committee within [**] after [**] receipt of a written notice of such Competitive Infringement of [**] decision as to whether to take any action with respect to such Competitive Infringement so that [**] may have the right, pursuant to such Section 13.5.2.1 (In the Territory), to initiate a Proceeding if [**] does not elect to initiate a Proceeding.

13.5.2.3 *Notification of Patent Certification*. If either Party becomes aware of any allegations of alleged patent invalidity, unenforceability or non-infringement of any Patent licensed under this Agreement Covering a Licensed Product (including methods of use thereof) pursuant to a Paragraph IV Patent Certification by a Third Party filing an Abbreviated New Drug Application, or other similar patent certification by a Third Party, and any foreign equivalent thereof, for a Generic Product, then such Party will notify and provide the other Party with copies of such allegations. Such notification and copies will be provided to such other Party as soon as practicable and at least within [**] after such Party receives such certification, and will be sent by email and overnight courier to the address set forth in Section 15.10 (Notices).

13.5.3 *Defense and Post-Grant Proceedings*. [**], at its sole cost and expense, will have the right (but not the obligation), as the Defending Party, at its sole discretion, (a) to defend against a declaratory judgment action or other action that is not a Post-Grant Proceedings, in each case, challenging any [**] Prosecuted Patent or [**] Collaboration Patent (a "**Third Party Action**"), and (b) to conduct any Post-Grant Proceedings with respect to any [**] Prosecuted Patent; *provided* that, if [**], then the Parties will share equally all Patent Costs incurred by [**] in connection with the defense of such Third Party Action or Post-Grant Proceeding. Within [**] after the relevant personnel at either Party receiving notice of a Third Party Action or becoming aware of the initiation of a Post-Grant Proceeding (or as otherwise agreed by the IP Committee), such Party will notify the other Party, and within a reasonable time to meet for a discussion thereof, the IP Committee will meet for discussion pursuant to Section 13.4.1.3(c) (IP Committee Responsibilities). Thereafter, [**] will notify the IP Committee of its intent to defend such Patent or conduct any Post-Grant Proceeding under this Section 13.5.3 (Defense and Post-Grant Proceedings), as applicable, within [**] (or as otherwise agreed by the IP Committee) after such IP Committee meeting (or such shorter period of time as is required to comply with applicable Law in the Territory to not waive any statutory rights). If [**] does not provide notice to the IP Committee of [**] intent to defend such Patent or conduct any Post-Grant Proceeding under this Section 13.5.3 (Defense and Post-Grant Proceedings), as applicable, within [**] after such IP Committee meeting (or such shorter period of time as is required to comply with applicable Law in the Territory to not waive any statutory rights), or

elects not to initiate or continue any such defense or Post-Grant Proceeding (in which case it will promptly provide notice thereof to [**]) then, as long as [**] decision not to take any such action is not due to Strategic Enforcement or Defense Reasons, [**] will, upon receiving confirmation from [**] that [**] has not taken any such action within the applicable period set forth in this Section 13.5.3 (Defense and Post-Grant Proceedings), have the right (but not the obligation), at its sole cost and expense, as the new Defending Party, at its sole discretion, to defend any such Patent against such a Third Party Action or conduct Post-Grant Proceedings for such Patent, as applicable, in each case of (a) and (b), as further set forth in Section 13.5.5 (Withdrawal, Cooperation and Participation); *provided* that, if [**], the Parties will share equally all Patent Costs incurred by [**] in connection with the defense of such Third Party Action or such Post-Grant Proceeding. For the avoidance of doubt, and notwithstanding anything in this Agreement to the contrary, [**] will have the sole and exclusive right (but not the obligation), at [**] sole discretion, to defend any [**] Background Patent against a Third Party Action.

13.5.4 *Cooperation Regarding Enforcement, Defense or Post-Grant Proceedings*. With respect to any Competitive Infringement action, Third Party Action or Post-Grant Proceeding identified above in Section 13.5.2 (Right to Enforce) and Section 13.5.3 (Defense and Post-Grant Proceedings) and subject to the terms and conditions of this Section 13.5.4 (Cooperation Regarding Enforcement, or Defense or Post-Grant Proceedings), the Party controlling any such Competitive Infringement action, Third Party Action or Post-Grant Proceeding (the "**Defending Party**") will keep the other Party (the "**Non-Defending Party**") reasonably informed of the status and progress of such enforcement, defense or Post-Grant Proceeding strategy via the IP Committee. The Defending Party will reasonably consider the Non-Defending Party's comments on any such efforts. The Non-Defending Party will provide the Defending Party with all reasonable assistance in the enforcement or defense of the applicable Patents, as the Defending Party may request, at such Defending Party's expense, including by signing or executing any necessary documents and consenting to it being named a party to any applicable proceedings. Where the Non-Defending Party is named a party or otherwise is joined involuntarily in any applicable proceeding, the Non-Defending Party will have the right to be represented by counsel of its choice at the Defending Party's expense, *provided* that in all other cases the Non-Defending Party will be solely responsible for the costs and expenses of its counsel and in all instances all communications between the Non-Defending Party and the Defending Party will be subject to the principles of Section 13.9 (Common Interest).

13.5.5 *Withdrawal, Cooperation and Participation*. With respect to any Competitive Infringement action, Third Party Action or Post-Grant Proceeding identified above, respectively, in Section 13.5.2 (Rights to Enforce) and Section 13.5.3 (Defense and Post-Grant Proceedings) and subject to the terms and conditions of this Section 13.5.5 (Withdrawal, Cooperation and Participation):

13.5.5.1 If [**] ceases to pursue or withdraws from such action, it will promptly notify [**] (in sufficient time to enable [**] to meet any deadlines by which any action must be taken to preserve any rights in such infringement, defensive action or Post-Grant Proceeding), then [**] will have the right (but not the obligation) to substitute itself for [**] in any Competitive Infringement action identified above in Section 13.5.2.2 (35 U.S.C. § 271(e)(2) Infringement) or in any Third Party Action or Post-Grant Proceeding identified above in Section 13.5.3 (Defense and Post-Grant Proceedings), in each case, involving any [**] Prosecuted Patents or [**] Collaboration Patents and proceed under the terms and conditions of this Section 13.5.5 (Withdrawal, Cooperation and Participation).

13.5.5.2 [**] will cooperate with [**] in controlling any such action (as may be reasonably requested by [**]), including, at [**] sole cost and expense, (a) providing access to relevant documents and other evidence, (b) using reasonable efforts to make [**] Affiliates and its and its Affiliates' licensees and Sublicensees and all of their respective employees, subcontractors, consultants and agents available at reasonable business hours and for reasonable periods of time,

but only to the extent relevant to such action, and (c) if reasonably necessary, by being joined as a party, subject to (with respect to this clause (c)) [**] agreeing to indemnify [**] for its involvement as a named party in such action and paying those Patent Costs incurred by [**] in connection with such joinder. [**], as the Defending Party in any such action, will keep [**] reasonably updated via the IP Committee with respect to any such action, including providing copies of all materials documents received or filed in connection with any such action to the extent permitted by applicable Law.

13.5.5.3 [**] will have the right to consult with [**] regarding any such action for which [**] is the Defending Party via the IP Committee, in each case at [**] sole cost and expense. If [**] elects to so be involved, [**] will provide [**] and its counsel with an opportunity to consult with [**] and its counsel regarding the prosecution of such action (including reviewing the contents of any correspondence, legal papers or other documents related thereto). [**] will take into account reasonable and timely requests and comments of [**] regarding such enforcement or defense.

13.5.6 *Settlement*. With respect to any enforcement action, Third Party Action or Post-Grant Proceeding identified above in this Section 13.5 (Third Party Infringement and Defense and Post-Grant Proceedings), the Defending Party will have the right to settle or otherwise dispose of such action (a) with the consent of the other Party, if it involved the Profit-Share Territory and (b) otherwise, on such terms and conditions as such Defending Party will determine in its sole discretion; *provided* that, in either case ((a) or (b)), notwithstanding the foregoing, no such settlement or other disposition will (i) impose any monetary restriction or obligation on or admit fault of the other Party or (ii) adversely affect the other Party's rights under this Agreement to any such Patent then being enforced or defended, in each case ((i) and (ii) without the prior written consent of the other Party, not to be unreasonably withheld, conditioned or delayed).

13.5.7 *Other Invalidity or Unenforceability Proceedings*. If [**] desires to bring an opposition, action for declaratory judgment, nullity action, interference, declaration for non-infringement, reexamination, post-grant proceedings, or other attack upon the validity, title or enforceability of a Patent Right owned or controlled by a Third Party and having one (1) or more claims that Cover a Licensed Product, or the use, sale, offer for sale or importation of a Licensed Product in the Territory, as applicable, (except insofar as such action is a counterclaim to or defense of, or accompanies a defense of a Third Party Action under Section 13.5.3 (Defense and Post-Grant Proceedings), in which case the provisions of such Section 13.5.3 (Defense and Post-Grant Proceedings) will govern), then [**] will so notify [**] and the Parties will promptly confer through the IP Committee. [**] will have the initial right, but not the obligation, to bring, at its own expense and in its sole control, such action in the Territory. [**] will be entitled to separate representation in such proceeding by counsel of its own choice and at its own expense, and will cooperate fully with the Party so appointed. Any awards or amounts received in bringing any such action will be first allocated to reimburse [**]'s expenses in such action, and any remaining amounts will be allocated between the Parties in accordance with the principle set forth in Section 13.5.8 (Allocation of Proceeds).

13.5.8 *Allocation of Proceeds*. If either Party recovers monetary damages from any Third Party in a suit in the Territory pursuant to this Section 13.5 (Third Party Infringement and Defense and Post-Grant Proceedings) or any royalties from a license agreement with a Third Party related to any alleged Competitive Infringement in the Territory, whether or not such damages or royalties result from the infringement of [**] Prosecuted Patents or the [**] Prosecuted Patents, then such recovery will be allocated first to the reimbursement of any expenses incurred by each Party in such litigation, action, or license, and any balance of any such recovery will be split as follows: (a) if [**] brings the action, (i) treated as Net Revenues, to the extent relating to all Licensed Products in a Product Class in the Profit-Share Territory prior to [**]'s exercise of an Opt-Out Right with respect to the applicable Product Class or (ii) as Net Sales, and shared with [**] as royalties pursuant to Section 9.8 (Licensed 217 Product and Licensed 324 Product

Products Royalties), to the extent relating to all Licensed Products in a Product Class in the [**] Territory or after [**] has exercised an Opt-Out Right with respect to the applicable Product Class; or (b) if [**] brings the action, then [**]% will be retained by [**] and [**]% will be paid to [**].

13.6 **Patent Extensions**. Subject to the rest of this Section 13.6 (Patent Extensions), with respect to any election to file for patent term restoration or extension, or any of their equivalents, [**] will have the sole and exclusive right to make any such decision relating to any [**] Prosecuted Patents or [**] Prosecuted Patents in the Territory with respect to any Licensed Product, *provided* that [**] will use reasonable efforts to obtain any such patent term restoration or extension, or any of their equivalents available for the Patents subject to the enforcement rights specified in Section 13.5.2 (Rights to Enforce) with respect to any Licensed Product; and further *provided*, *however*, that [**] will not be required to use any such reasonable efforts in a manner inconsistent with any term or condition of this Section 13.6 (Patent Extensions) if any such item could impair the applicable Patent (including its enforcement potential) or the ability to obtain any such patent term restoration or extension, supplemental protection certificate or any of their equivalents for any other pharmaceutical product. [**] will consult with [**] through the IP Committee regarding the strategy for such filings. Subject to Section 13.4.4 (Patent Costs Sharing), [**] will bear all Patent Costs incurred in making such filings. Upon the written request by [**], [**] will reasonably cooperate with the implementation of such requesting Party's decisions made in a manner consistent with this Section 13.6 (Patent Extensions).

13.7 **Orange Book Listings**. [**] will have lead responsibility for making any filing with respect to any [**] Collaboration Patent, Joint Collaboration Patent or [**] Licensed Patent in connection with the Orange Book maintained by the FDA or similar or equivalent patent listing or linking requirement, if any, in other countries in the Territory for the Licensed Products. [**] will consult with [**] through the IP Committee regarding the strategy for such filings. If the Parties disagree on the appropriate strategy with respect to any such filings, the disagreement will be resolved by the IP Committee, subject to Section 13.4.1.4 (Decision Making). [**] will provide reasonable assistance to [**] in connection with any such filing.

13.8 **Third Party Rights**. Notwithstanding the foregoing provisions of this Article 13 (Intellectual Property), each Party's rights and obligations with respect to any Patent under this Article 13 (Intellectual Property) will be subject to the Third Party rights and obligations (including under any in-license of a Patent applicable to such Party's licensed intellectual property rights hereunder) set forth in Schedule 13.8 (Third Party Rights).

13.9 **Common Interest**. All information exchanged between the Parties regarding the Prosecution and Maintenance, and enforcement and defense, of Patents under this Article 13 (Intellectual Property) will be deemed Confidential Information of the disclosing Party. In addition, the Parties acknowledge and agree that, with regard to such Prosecution and Maintenance, and enforcement and defense, the interests of the Parties as collaborators and licensor and licensee are to obtain the strongest patent protection possible, and as such, are aligned and are legal in nature. The Parties agree and acknowledge that they have not waived, and nothing in this Agreement constitutes a waiver of, any legal privilege concerning the Patents under this Article 13 (Intellectual Property), including privilege under the common interest doctrine and similar or related doctrines. Notwithstanding anything to the contrary contained herein, to the extent a Party has a good faith belief that any information required to be disclosed by such Party to the other Party under this Article 13 (Intellectual Property) is protected by attorney-client privilege or any other applicable legal privilege or immunity, such Party will not be required to disclose such information and the Parties will in good faith cooperate to agree upon a procedure (including entering into a specific common interest agreement, disclosing such information on a "for counsel eyes only" basis or similar procedure) under which such information may be disclosed without waiving or breaching such privilege or immunity.

13.10 **Trademarks**. In the Profit-Share Territory, (a) the JCC will recommend to the JSC to determine whether to approve a designated Commercialization Lead Party to be responsible for implementing the LP U.S. TM Strategy for the registration, maintenance, enforcement and defense of the LP U.S. Trademark for a Licensed Product, which Party will own all applications for registration and registrations for such LP U.S. Trademark, and (b) any and all Trademark Costs for the LP U.S. Trademarks incurred in accordance with the applicable Joint Commercialization Plan and Joint Commercialization Budget will be deemed Joint Commercialization Costs. In the Biogen Territory, Biogen will be responsible for the registration, maintenance, enforcement and defense of, and will own all applications for registration and registrations for, all Trademarks for use in connection with the Licensed Products in the Biogen Territory, and will be solely responsible for all Trademark Costs incurred for such activities.

14. TERM AND TERMINATION

14.1 **Term**. This Agreement will be effective as of the Effective Date and, unless terminated earlier pursuant to this Article14 (Term and Termination), will continue on a Licensed Product-by-Licensed Product and country-by-country basis until the date on which: (a) in any country in the Biogen Territory, the Royalty Term has expired for all Licensed Products in a Product Class in such country, and (b) for the Profit-Share Territory, the Parties agree to permanently cease to Commercialize all Licensed Products in a Product Class in the Profit-Share Territory (the "**Term**"). Upon the expiration of this Agreement for all Licensed Products in a Product Class in a country, the licenses granted from Sage to Biogen under this Agreement with respect to such Licensed Products in such Product Class in such country will become fully-paid, irrevocable, and perpetual.

14.2 **Termination Prior to Effective Date**. On the Effective Date, Sage will provide to Biogen updated versions of any schedules required to be provided under Section 11.2 (Representations and Warranties of Sage of the Execution Date and the Effective Date) as a result of Sage making anew as of the Effective Date the representations and warranties of Section 11.2 (Representations and Warranties of Sage of the Execution Date and the Effective Date). If any of the representations and warranties set forth in Section [**], or Section [**] (Representations and Warranties of Sage as of Execution Date and Effective Date) do not remain true and correct as of the Effective Date to the same extent as of the Execution Date, then Biogen may terminate this Agreement in its entirety with respect to all Product Classes upon written notice to Sage [**].

14.3 **Termination by Biogen for Convenience**. At any time during the Term, Biogen may terminate this Agreement (a) in its entirety or (b) on a Product Class-by-Product Class basis for the United States, each Major European Country, or for a Product Class in its entirety as to the entire Territory, in each case ((a) and (b)), for any reason or no reason upon one hundred and fifty (150) days' prior written notice to Sage.

14.4 **Termination for Material Breach**.

14.4.1 *Material Breach*.

14.4.1.1 Subject to Section 14.4.2 (Disputed Breach), Sage will have the right to terminate this Agreement upon delivery of written notice to Biogen in the event of any material breach by Biogen of this Agreement, solely with respect to the Product Class(es) and Region(s) to which such material breach relates, *provided* that such termination will not be effective if such breach has been cured within [**] after written notice thereof is given by Sage to Biogen specifying the nature of the alleged breach (or, if such default cannot be cured within such [**] period, within [**] after such notice if Biogen commences actions to cure such default within such [**] period and thereafter diligently continues such actions, but fails to cure the default by the end of such

[**]). Notwithstanding any provision to the contrary set forth in this Agreement, to the extent a material breach involves the failure to make a payment when due, such breach must be cured within [**] after written notice thereof is given by Sage to Biogen.

14.4.1.2 Subject to Section 14.4.2 (Disputed Breach), Biogen will have the right to terminate this Agreement upon delivery of written notice to Sage in the event of any material breach by Sage of this Agreement, solely with respect to the Product Class(es) and Region(s) to which such material breach relates, *provided* that such termination will not be effective if such breach has been cured within [**] after written notice thereof is given by Biogen to Sage specifying the nature of the alleged breach (or, if such default cannot be cured within such [**] period, within [**] after such notice if Sage commences actions to cure such default within such [**] period and thereafter diligently continues such actions, but fails to cure the default by the end of such [**]). Notwithstanding any provision to the contrary set forth in this Agreement, to the extent a material breach involves the failure to make a payment when due, such breach must be cured within [**] after written notice thereof is given by Biogen to Sage.

14.4.2 *Disputed Breach*. If the alleged breaching Party disputes in good faith the existence of a breach specified in a notice provided by the other Party in accordance with Section 14.4.1 (Material Breach) and such alleged breaching Party provides the other Party notice of such dispute within the applicable [**] or [**] cure period, then (a) the non-breaching Party will not have the right to terminate this Agreement under Section 14.4.1 (Material Breach) and (b) the applicable cure period set forth in Section 14.4.1 (Material Breach) will be tolled during the pendency of the dispute resolution process set forth in Section 15.3 (Dispute Resolution), in each case ((a) and (b)), unless and until the dispute resolution process set forth in Section 15.3 (Dispute Resolution) has been completed (including the tolling and cure periods set forth therein), and in any event the terms of Section 15.3.7 (Tolling) will apply.

14.5 **Termination for Insolvency**. To the extent permitted by applicable Law, either Party may terminate this Agreement upon the filing or institution of bankruptcy, reorganization, liquidation, or receivership proceedings, upon the appointment of a receiver or trustee over all or substantially all property, or upon an assignment of a substantial portion of the assets for the benefit of creditors by the other Party; *provided*, *however*, that in the case of any involuntary bankruptcy proceeding such right to terminate will only become effective if the Party consents to the involuntary bankruptcy or such proceeding is not dismissed within [**] after the filing thereof.

14.5.1 All rights and licenses now or hereafter granted by one Party to the other Party under or pursuant to this Agreement are, for all purposes of Section 365(n) of Title 11 of the United States Code, as amended or analogous provisions of applicable Law outside the United States (the "**Bankruptcy Code**"), licenses of rights to "intellectual property" as defined in the Bankruptcy Code. Upon the filing or institution of bankruptcy, reorganization, liquidation, or receivership proceedings, upon the appointment of a receiver or trustee over all or substantially all property, or upon an assignment of a substantial portion of the assets for the benefit of creditors by a Party, such Party agrees that the other Party, as licensee of such rights under this Agreement, will retain and may fully exercise all of its rights and elections under the Bankruptcy Code. Subject to Section 365 of the Bankruptcy Code, each Party will, during the Term, create and maintain current copies or, if not amenable to copying, other appropriate embodiments, to the extent feasible, of all intellectual property rights licensed under this Agreement. Each Party acknowledges and agrees that "embodiments" of intellectual property rights within the meaning of Section 365(n) include laboratory notebooks, cell lines, product samples, and inventory, research studies and data, all Regulatory Approvals (and all applications for Regulatory Approval) and rights of reference therein, in each case, to the extent licensed by a Party to the other Party hereunder, as well as the Sage Licensed Technology and the Biogen Licensed Technology (as the case may be), and all information related to the Sage Licensed Technology and the Biogen Licensed Technology (as the case may be). If (a) a case under the Bankruptcy

Code is commenced by or against the debtor Party, (b) this Agreement is rejected as provided in the Bankruptcy Code and (c) the non-debtor Party elects to retain its rights hereunder as provided in Section 365(n) of the Bankruptcy Code and upon written request of the non-debtor Party, then:

14.5.1.1 the non-debtor Party will be authorized to retain and exercise its rights under this Agreement (including a right to enforce any exclusivity provision contained herein) to intellectual property rights (including all embodiments thereof) licensed hereunder and held by the debtor Party as such rights existed immediately before the commencement of the case referenced in clause (a) of Section 14.5 (Termination for Insolvency) above, subject to the provisions of Section 365(n) of the Bankruptcy Code related to, among other things, payment of the royalties and waiver of rights to setoff and any claim allowable under Section 503(b) of the Bankruptcy Code related to the performance of this Agreement, but neither such provision nor such performance by the non-debtor Party will release the debtor Party from liability resulting from rejection of the license or the failure to perform such obligations

14.5.1.2 to the extent provided herein, the debtor Party will provide to the non-debtor Party any intellectual property (including any applicable embodiment) held by the debtor Party; and

14.5.1.3 the debtor Party will not interfere with the non-debtor Party's rights under this Agreement, or any agreement supplemental hereto, with respect to such intellectual property rights (including such embodiments), including any right to obtain such intellectual property rights (or such embodiments) from another entity, to the extent provided in Section 365(n) of the Bankruptcy Code.

14.6 Effect of Termination by Sage for Cause or for Biogen's Insolvency, or by Biogen for Convenience. Upon termination of this Agreement by Sage pursuant to Section 14.4.1.1 (Material Breach) or Section 14.5 (Termination for Insolvency) or by Biogen pursuant to Section 14.3 (Termination by Biogen for Convenience):

14.6.1 *Termination of Licenses*. If this Agreement is terminated in its entirety, then all licenses granted under Article 8 (Licenses) granted under this Agreement with respect to all Licensed 217 Products and all Licensed 324 Products will terminate. If this Agreement is terminated in part with respect to the Terminated Products or the Terminated Territory, then all licenses granted by Sage to Biogen under Section 8.1.1 (License Grant to Biogen; Sage Retained Rights) will terminate solely with respect to the Terminated Products and the Terminated Territory, as applicable, and all licenses granted by Biogen to Sage under Section 8.1.2 (License Grant to Sage; Biogen Retained Rights) will terminate solely with respect to the Terminated Products and the Terminated Territory, as applicable.

14.6.2 *Reversion License*. Effective upon either (a) the date of termination of this Agreement in case of termination by Sage pursuant to Section 14.4.1.1 (Material Breach) or Section 14.5 (Termination for Insolvency) or termination of this Agreement in its entirety by Biogen pursuant to Section 14.3 (Termination by Biogen for Convenience) or (b) the date of expiration of the specified notice period in Biogen's notice of termination of this Agreement *in part* pursuant to Section 14.3 (Termination by Biogen for Convenience), subject to the terms of this Section 14.6.2 (Reversion License), Biogen, on behalf of itself and its Affiliates, hereby grants (without any further subsequent action required on the part of Sage) to Sage and its Affiliates, an irrevocable, perpetual license for the Terminated Products in the Terminated Territory, with the right to grant sublicenses through multiple tiers, under the Reversion Technology [**] (the "**Reversion License**"), where the Reversion License will be [**]. If any Reversion Technology is in-licensed by Biogen or any of its Related Parties, then Biogen will promptly inform Sage of any payment obligations and any other obligations applicable to Sage under such Third Party agreements and, unless

Sage elects to decline receiving a sublicense under such in-licensed Reversion technology as part of the Reversion License, then (i) in consideration therefor, Sage will pay to Biogen amounts equal to any payments that Biogen owes to any Third Party with respect to such in-licensed Reversion Technology solely with respect to the Terminated Product for the Terminated Territory, with all payments made in accordance with Section 9.10 (Other Amounts Payable) and Section 9.11 (Payment Terms) *mutatis mutandis*, and (ii) Sage's rights under the Reversion License will be subject to the applicable terms of the applicable Third Party agreement of which Sage has been made aware.

14.6.3 *Wind Down Costs*. In the event of termination of this Agreement by Sage pursuant to Section 14.4.1.1 (Material Breach) or Section 14.5 (Termination for Insolvency) or termination of this Agreement by Biogen pursuant to Section 14.3 (Termination by Biogen for Convenience), each Party will pay for [**], for (i) [**], or (ii) [**], and (b) Biogen will pay for the costs and expenses for all Clinical Studies conducted by Biogen in support of obtaining Regulatory Approval for Commercialization in the Biogen Territory that are ongoing prior to the date of the written notice from one Party to the other Party under Section 14.4.1.1 (Material Breach), Section 14.5 (Termination for Insolvency) or Section 14.3 (Termination by Biogen for Convenience), as applicable, for (i) all Licensed 217 Products and all Licensed 324 Products, if this Agreement is terminated in its entirety, or (ii) a Region of the Biogen Territory, if this Agreement is terminated in part with respect to such Region of the Biogen Territory, in each case ((a) and (b)), for a period of [**] after the effective date of termination of this Agreement (the "**Termination Wind-Down Period**").

14.6.4 *Regulatory Materials; Commercial Materials.* Biogen, on behalf of itself and its Affiliates, at its cost, will (a) assign to Sage or Sage's designee possession and ownership of all Regulatory Materials, Pricing and Reimbursement Approvals and material correspondence and conversation logs solely relating to the applicable Terminated Products in the Terminated Territory, in each case, in Biogen's Control, and (b) transfer to Sage or Sage's designee copies of all data, reports, records, materials and information, including customer lists and other sales and marketing information in Biogen's Control to the extent that such data, reports, records, materials or other information solely related to the applicable Terminated Products in the Terminated Territory, including all non-clinical and clinical data relating to the applicable Terminated Products, and all adverse event data solely related to the applicable Terminated Products in Biogen's Control, and (c) transfer to Sage all records and materials in Biogen's Control containing Confidential Information of Sage solely relating to the applicable Terminated Products in the Terminated Territory. In addition, effective upon the effective date of termination, Biogen, on behalf of itself and its Affiliates, will appoint Sage as Biogen's or Biogen's Related Parties' agent for all matters involving Regulatory Authorities in the Terminated Territory solely relating to the applicable Terminated Products until all Regulatory Materials, Pricing and Reimbursement Approvals and other governmental or Regulatory Approvals relating to the Development, Manufacture, performance of Medical Affairs Activities with respect to or Commercialization of the Terminated Products in the Terminated Territory have been assigned to Sage or its designee. In the event of failure to obtain such assignment, effective upon the effective date of termination, Biogen, on behalf of itself and its Affiliates, hereby consents and grants to Sage the right to access and reference (without any further action required on the part of Biogen, whose authorization to file this consent with any Regulatory Authority of the Terminated Territory is hereby granted effective as of the date of termination) any such item with respect to the applicable Terminated Products in the Terminated Territory.

14.6.5 *Sell-Off and Appointment as Distributor.* If the effective date of termination of this Agreement in its entirety or of this Agreement in part, as the case may be, is after the First Commercial Sale in the applicable Terminated Territory of the applicable Terminated Products, then, to the extent permitted by applicable Law, effective upon such date of such termination, Biogen, its Affiliates and its Sublicensees will have the right to sell any inventory of such Terminated Products intended for Commercialization in the Terminated Territory existing as of such date of termination in accordance with

the terms and conditions of this Agreement in such Terminated Territory by or under the authority of Biogen as of the notice date of the applicable termination, for up to (a) [**] after the effective date of the applicable termination, in the case that Sage has obtained all Regulatory Approvals required to sell such Terminated Products as of the notice date of the applicable termination or (b) [**] after the effective date of the applicable termination or such longer time as may be agreed by the Parties, in the case that Sage has not obtained all Regulatory Approvals required to sell such Terminated Products as of the notice date of the applicable termination (either of ((a) or (b)), the "**Commercialization Wind-Down Period**"). Any Terminated Product sold or disposed of by Biogen, its Affiliates or its Sublicensees in the Terminated Territory during the Commercialization Wind-Down Period will be subject to applicable payment obligations under Article 9 (Payments). Within [**] after the end of the Commercialization Wind-Down Period, Biogen will notify Sage of any quantity of Terminated Product for the Terminated Territory remaining in Biogen's inventory and, subject to the terms of Section 14.6.6 (Continuation of Supply), and Sage may purchase, in its discretion, any such quantities of the Terminated Product from Biogen at a transfer price equal to (i) [**]. After the Commercialization Wind-Down Period for a Terminated Product, Biogen or its Related Parties will appoint Sage as exclusive distributor of such Terminated Product in the Territory and grant Sage the right to appoint sub-distributors, until such time as all Regulatory Approvals for the applicable Terminated Product in the Territory have been transferred to Sage or its designee; *provided* that, Biogen will not be required to appoint Sage as its distributor of the applicable Terminated Products as contemplated by this Section 14.6.5 (Sell-Off and Appointment as Distributor) if the terms of any Third Party agreements of Biogen or any of its Related Parties necessary for the Development, Manufacture or Commercialization of the applicable Terminated Products (A) [**] or (B) [**]; *further provided* that if no such appointment is possible, then [**]. Without limiting the foregoing, if such termination occurs after the First Commercial Sale of a Terminated Product then, during the Commercialization Wind-Down Period for such Terminated Product, the Parties will use reasonable efforts to transition all Commercialization activities to Sage as Sage may reasonably request.

14.6.6 *Continuation of Supply.* Upon Sage's request, if (a) the effective date of termination of this Agreement in its entirety or of this Agreement in part, as the case may be, is after the First Commercial Sale of the applicable Terminated Products in any country of the Terminated Territory, (b) as of the effective date of such termination, Biogen or its Related Parties are Manufacturing finished product with respect to the applicable Terminated Products for Commercialization thereof in the Terminated Territory, and (c) as of the effective date of such termination, neither Sage nor any of its Related Parties has obtained all necessary Regulatory Approvals to Manufacture the applicable Terminated Products and procured or developed its own source of finished product supply with respect to the applicable Terminated Products for Commercialization thereof in the Terminated Territory, then, at Sage's option and at Sage's sole cost and expense, Biogen or its Related Parties will supply to Sage such finished product with respect to the applicable Terminated Products for Commercialization in the Territory at a price equal to (i) [**] following the applicable effective date of termination of this Agreement in its entirety or in part and (ii) [**] following the applicable effective date of termination of this Agreement in its entirety or in part.

14.6.7 *Third Party Agreements.* If Sage so requests in writing, and to the extent permitted under Biogen's obligations to Third Parties on the effective date of termination of this Agreement in its entirety or of this Agreement in part, as the case may be, effective as of the effective date of such termination, Biogen will assign to Sage, and Sage will assume, [**]; *provided* that, if the assignment of any such Third Party agreement [**], such assignment of such Third Party agreement will [**].

14.6.8 *Sublicense Survival*. Sage will, [**] (each, a "**New License Agreement**"). Notwithstanding any provision to the contrary set forth in this Agreement, Sage will [**]

14.6.9 *Biogen Trademarks*. If as of the effective date of termination of this Agreement in its entirety or of this Agreement in part, as the case may be, (a) Biogen owns any Trademarks that are used exclusively for the applicable Terminated Products in the Terminated Territory and (b) such Trademarks have been approved by the Regulatory Authority in a country of the Terminated Territory for use with the applicable Terminated Products (such Trademarks, the "**Reversion Trademarks**"), then, at Sage's written request, promptly following the effective date of such termination, Biogen, on behalf of itself and its Affiliates, will transfer and assign to Sage all of Biogen's and its Affiliates' rights, title and interest in and to such Reversion Trademarks for the applicable country of the Terminated Territory, pursuant to an agreement that the Parties will negotiate and enter into after such effective date of termination, which agreement will contain, to the extent applicable, quality control and indemnification obligations customary of such agreements applying to Sage's use of such transferred Reversion Trademarks(s) following such assignment or license, as applicable.

14.6.10 *Exclusivity*. In any event of termination of this Agreement, each Party's obligations under Section 11.7.1.1 (Exclusivity) will terminate with respect to (a) 217 Competing Products, if the Product Class with respect to which this Agreement is terminated is the Licensed 217 Products, or (b) 324 Competing Products, if the Product Class with respect to which this Agreement is terminated is the Licensed 324 Products, or (c) a Product Class for the Profit-Share Territory, if the Agreement is terminated for such Product Class for the Profit-Share Territory or a Region.

14.6.11 *Return of Confidential Information*. Except in the case of Sage for any Confidential Information that is the subject of its Reversion License, each Party, at its cost, will promptly return to the other Party (or as directed by such other Party destroy and certify to such other Party in writing as to such destruction) all of such other Party's Confidential Information that relates to the Terminated Products for the Terminated Territory and that was provided by or on behalf of such other Party hereunder that is in the possession or control of such Party (or any of its Affiliates, Sublicensees or subcontractors), except that such Party will have the right to retain copies of intangible Confidential Information of such other Party for legal purposes in accordance with such Party's internal compliance policies. Notwithstanding the return or destruction of any Confidential Information, the Parties will continue to be bound by their confidentiality obligations under this Agreement.

14.6.12 *IP Files Transfer*. With respect to any Biogen Collaboration Patents that claim solely the Terminated Products in the Terminated Territory and under which Sage is granted an exclusive license pursuant to Section 14.6.2 (Reversion License), at Sage's cost and expense, Biogen will transfer to Sage or its designee copies of filings, applications and correspondence received or generated by Biogen in the course of Prosecuting and Maintaining such Biogen Collaboration Patents. With respect to any Sage Prosecuted Patents for which Biogen has exercised its step-in rights under Section 13.4.3.2 (Biogen Step-In) or in respect of which Biogen has engaged in the enforcement thereof or defense or Post-Grant Proceedings therefor under, respectively, Section 13.5.2 (Right to Enforce) and Section 13.5.3 (Defense and Post-Grant Proceedings), at Sage's cost and expense, Biogen will transfer to Sage or its designee copies of filings, applications, correspondence and other related records received or generated by Biogen in the course of exercising such activities.

14.6.13 *Dissolution of Committees*. If this Agreement is terminated in its entirety, all Committees will be dissolved as of the effective date of such termination, *provided* that, for any surviving provisions requiring action or decision by any of the Committees or an Executive Officer, each Party will appoint representatives to act as its Committee members or Executive Officer, as applicable. If this Agreement is terminated in part, then the subject-matter responsibility of the respective Committees will no longer extend to the Terminated Products.

14.6.14 *Termination of Rights and Obligations*. Except as set forth in this Section 14.6 **(**Effect of Termination by Sage for Cause or for Biogen's Insolvency, or by Biogen for Convenience**)** and Section 14.8 **(**Effect of Expiration or Termination; Survival), all rights and obligations of the Parties under this Agreement will terminate as of the applicable effective date of any termination of this Agreement in its entirety.

14.6.15 *Further Assurances*. Each Party will execute all reasonable documents and take all such further actions as may be reasonably requested by the other Party, at such other Party's cost, in order to give effect to the foregoing clauses.

14.7 **Biogen Right of Termination for Cause or for Sage's Insolvency**. If Biogen has the right to terminate this Agreement pursuant to Section 14.4.1.2 (Material Breach) or Section 14.5 (Termination for Insolvency**)**, then Biogen will have the option to either: (a) terminate this Agreement with respect to the Product Class(es) and Region(s) to which such material breach relates or in its entirety, or (b) [**]. Biogen's notice to Sage, under Section 14.4.1.2 (Material Breach) or Section 14.5 (Termination for Insolvency), as applicable, will specify which of the foregoing options Biogen has elected.

14.7.1 *Reversion of Rights to Sage*. The provisions of Section 14.6 (Effect of Termination by Sage for Cause or for Biogen's Insolvency, or by Biogen for Convenience) covering a termination of this Agreement in its entirety will apply *mutatis mutandis* as of the effective date of such termination, except that in the event Biogen terminates this Agreement pursuant to Section 14.4.1.2 (Material Breach) or Section 14.4 (Termination for Insolvency):

14.7.1.1 With respect to the Reversion License, [**]: (a) [**], (b) [**]; and

14.7.1.2 Sage will reimburse Biogen for the undisputed portion of all reasonable and documented costs and expenses incurred by Biogen in the performance of any of Biogen's obligations under Section 14.6 (Effect of Termination by Sage for Cause or for Biogen's Insolvency, or by Biogen for Convenience) no later than [**] after receiving an applicable invoice from Biogen for the same.

14.7.2 *[**]*. In the event [**]

[**].

14.7.2.5 *Further Assurances*. Each Party will execute all reasonable documents and take all such further actions as may be reasonably requested by the other Party, at such other Party's cost, in order to give effect to the foregoing clauses.

14.8 **Effect of Expiration or Termination; Survival**.

14.8.1 Expiration or termination of this Agreement for any reason will not relieve the Parties of any liability or obligation which accrued hereunder prior to the effective date of such termination or expiration, nor preclude either Party from pursuing all rights and remedies it may have hereunder or at Law or in equity, with respect to any breach of this Agreement.

14.8.2 In addition to the termination consequences set forth in Section 14.6 (Effect of Termination by Sage for Cause or for Biogen's Insolvency, or by Biogen for Convenience) and Section 14.7 (Biogen Right of Termination for Cause or for Sage's Insolvency) (and any Sections referenced therein), the following provisions will survive expiration or termination of this Agreement in its entirety

for any reason: Article 1 (Definitions), Section 3.7 (Joint Program Activities Records) (to the extent consistent with the applicable Party's record retention policies), Section 6.9 (Recalls, Market Withdrawals or Corrective Actions), Section 6.11 (Priority Review Voucher), Section 7.8.1 (Manufacturing Technology Transfer) (solely in case of termination and solely with respect to amounts accrued prior to termination but not paid and the cost allocation provisions therein), Section 8.5 (No Other Rights) (solely in case of termination), Article 9 (Payments) (other than Section 9.4 (Finance Working Group) and Section 9.5 (Sage Opt-Out)) (solely with respect to amounts accrued prior to termination but not paid, and the reporting, information procedures and audits associated therewith), Article 10 (Confidentiality and Publications), Article 12 (Indemnification, Limitation of Liability, Insurance), Section 13.1 (Inventorship), Section 13.2 (Ownership), Section 13.4.3 ([**]) (solely with respect to the Joint Collaboration Patents), Section 13.4.4 (Patent Costs Sharing) (solely with respect to the Joint Collaboration Patents and for the Parties to continue sharing 50:50 the Patent Costs incurred for their Prosecution and Maintenance of the Joint Collaboration Patents), Section 13.4.5 (Patent Miscellaneous) (solely with respect to the Joint Collaboration Patents), Section 13.9 (Common Interest), Section 14.1 (Term) (solely in case of expiration), Section 14.8 (Effect of Expiration or Termination, Survival), and Article 15 (Miscellaneous).

15. MISCELLANEOUS

15.1 **Assignment**.

15.1.1 *General*. Except as provided in this Section 15.1 **(**Assignment**)**, this Agreement may not be assigned or otherwise transferred, nor may any right or obligation hereunder be assigned or transferred, by either Party without the prior written consent of the other Party. Notwithstanding the foregoing, (a) either Party may, without the other Party's prior written consent, (i) assign this Agreement and its rights and obligations hereunder in whole or in part to an Affiliate, (ii) assign this Agreement and its rights and obligations hereunder in whole to a party that acquires, by merger, sale of assets, reorganization or otherwise, all or substantially all of the business of such Party, and (b) subject to Section 9.11.5.3 (Tax Actions), Biogen may[**], *provided* that Biogen may not [**]. Any permitted successor or assignee of any rights or obligation under this Agreement must expressly assume performance thereof. Notwithstanding, the assigning Party will remain responsible for the performance by its assignee of any obligation hereunder so assigned. Any purported assignment in violation of this Section 15.1 **(**Assignment**)** will be void.

15.1.2 *Securitization*. Notwithstanding anything to the contrary in Section 15.1.1 (General) or elsewhere in this Agreement (but subject to the indemnification obligations under Section 9.11.5.3 (Tax Actions)), Sage may assign to a Third Party its right to receive the milestone payments under Sections 9.6 **(**Licensed Products Regulatory/Commercial Milestone Payment**s)** and 9.7 (Licensed Products Sales Milestone Payments) and the royalty payments under Section 9.8 (Licensed Products Royalties) (such assignment, a "**Securitization Transaction**"). In connection with a contemplated Securitization Transaction, Sage may disclose to such Third Party [**] (*provided* that such Third Party is under obligations of confidentiality and non-use with respect to Confidential Information included in [**] that are no less stringent than the terms of Article 10 (Confidentiality and Publication) (but of duration customary in confidentiality agreements entered into for a similar purpose)), and to allow such Third Party to exercise its rights with respect to such Securitization Transaction. After the closing of any such Securitization Transaction with a Third Party, Sage may disclose to such Third Party [**], to the extent reasonably necessary to enable such Third Party to exercise its rights with respect to such Securitization Transaction. As part of any consummated Securitization Transaction, subject to the terms of this Section 15.1.2 (Securitization), Sage may assign, [**], its right to receive the royalty reports and to conduct audits under, respectively, Section 9.11.2 (Reports and Royalty Payments) and Section 9.11.3 (Records and Audits) to the counterparty in such Securitization Transaction, and to allow such counterparty to exercise its rights under such Sections.

15.2 **Governing Law**. The Agreement will be construed and the respective rights of the Parties determined in accordance with the substantive Laws of the Commonwealth of Massachusetts, notwithstanding any provisions of the Laws of the Commonwealth of Massachusetts or any other Law governing conflicts of laws to the contrary.

15.3 **Dispute Resolution**.

15.3.1 *Disputes*. Except as otherwise expressly set forth in this Agreement, including Section 2.7 (Resolution of Committee Disputes), Section 8.3.2.4 (New Technology Disputes) and Section 13.4.1.4 (Decision Making), disputes of any nature arising under, relating to, or in connection with this Agreement ("**Disputes**") will be resolved pursuant to this Section 15.3 (Dispute Resolution). For the avoid of doubt, disputes of any nature arising under, relating to, or in connection with the SPA will be subject to resolution in accordance with the dispute resolution provisions thereunder.

15.3.2 *Dispute Escalation*. In the event of a Dispute between the Parties, the Parties will first attempt to resolve such Dispute by negotiation and consultation between themselves. In the event that such Dispute is not resolved on an informal basis within [**] from receipt of the written notice of a Dispute, any Party may, by written notice to the other, have such Dispute referred to the Executive Officers (or their designee, which designee is required to have decision-making authority on behalf of such Party), who will attempt to resolve such Dispute by negotiation and consultation for a [**] period following receipt of such written notice. Any final decision agreed by the Executive Officers will be conclusive and binding on the Parties under the then existing circumstances, *provided* that no such decision shall modify or amend the terms or conditions of this Agreement.

15.3.3 *General*. Except as set forth in Section 2.7 (Resolution of Committee Disputes), Section 8.3.2.4 (New Technology Disputes), Section 9.11.3.2 (Audit Disputes) or Section 13.4.1.4 (Decision Making), or Section 15.3.5 (Expert Arbitration), or as otherwise expressly set forth in this Agreement, in the event the Parties have not resolved such Dispute within [**], either Party may at any time after such [**] period elect to initiate a proceeding pursuant to the procedures set forth in Section 15.3.4 (Jurisdiction) for purposes of having the Dispute settled.

15.3.4 *Jurisdiction*. Each of the Parties (a) hereby submits to the jurisdiction of the United States District Court for the District of Massachusetts or any Massachusetts court sitting in Boston so long as one of such courts will have subject matter jurisdiction over such claim, in any proceeding arising out of or relating to this Agreement and (b) agrees not to commence any suit, action or proceeding relating thereto except in such court, and waives, to the fullest extent permitted by applicable Law, the right to move or dismiss or transfer any action brought in such court on the basis of any objection to personal jurisdiction, venue or inconvenient jurisdiction. Any rights to trial by jury with respect to any suit, action, proceeding or claim (whether based upon contract, tort or otherwise), directly or indirectly, arising out of or relating to this Agreement hereunder are expressly and irrevocably waived by each of the Parties.

15.3.5 *Expert Arbitration*. Any dispute expressly stated in this Agreement to be resolved pursuant to this Section 15.3.5 (Expert Arbitration) will take place pursuant to the following procedures.

15.3.5.1 The expert arbitration will be overseen by and conducted as a "baseball" form of binding arbitration conducted by a panel of three (3) arbitrators ("**Panel**"). No later than [**] after the initiation of arbitration, each Party will appoint one (1) arbitrator and, no later than [**] after confirmation of the two (2) Party-appointed arbitrators, the third (3rd) arbitrator will be selected by the two (2) Party-appointed arbitrators and will act as the chair. The Parties may confer with their respective Party-appointed arbitrators regarding the appointment of the chair. Each arbitrator comprising the Panel will have at least [**] of experience in the negotiation of

biotechnology and pharmaceutical license and collaboration agreements. At the election of any member of the Panel, the Panel may engage one or more independent experts with experience in the subject matter of the Dispute to advise the Panel, but final decision-making authority will remain with the panel.

15.3.5.2 No later than [**] after the constitution of the Panel, each Party will submit to both the Panel and the other Party a detailed written proposal setting forth its proposed resolution of the Dispute. The Parties will also provide to the Panel a copy of this Agreement, as may be amended at such time.

15.3.5.3 No later than [**] after the delivery of the Parties' detailed written proposals to the Panel, each Party will submit to both the Panel and the other Party a legal brief (and any exhibits) explaining and supporting the Party's detailed written proposal, which legal brief shall be no more than [**].

15.3.5.4 There will be no discovery and there will be no hearing, although such arbitration proceeding will be deemed to have its seat in Boston, Massachusetts, and all arbitration proceedings will be conducted in the English language.

15.3.5.5 No later than [**] after the submission of the Parties' legal briefs, the Panel will select one of the two detailed written proposals (without modification) provided by the Parties that the Panel believes is most consistent with the intention underlying and agreed principles set forth in this Agreement. The decision of the Panel will be final and unappealable. The detailed written proposal selected by the Panel will automatically be binding on the Parties.

15.3.5.6 The Panel must select one of the two detailed written proposals and may not combine elements of both detailed written proposals or take any other action.

15.3.5.7 Each Party shall bear its own attorneys' fees, costs and disbursements arising out of the arbitration, and shall pay an equal share of the fees and costs of the Panel.

15.3.6 *Injunctive Relief*. Notwithstanding the dispute resolution procedures set forth in this Section 15.3 (Dispute Resolution), in the event of an actual or threatened breach of this Agreement, the aggrieved Party may seek equitable relief (including restraining orders, specific performance or other injunctive relief), without first submitting to any dispute resolution procedures hereunder. Any claim for such equitable relief will be submitted to the United States District Court for the District of Massachusetts or any Massachusetts court sitting in Boston so long as one of such courts will have subject matter jurisdiction over such claim, and each Party hereby irrevocably consents to the exclusive jurisdiction of such courts (and of the appropriate appellate courts therefrom) in any proceeding with respect to any such claim and irrevocably waives, to the fullest extent permitted by Law, any objection that it may now or hereafter have to the laying of the venue of any such proceeding in any such court or that any such proceeding brought in any such court has been brought in an inconvenient forum. Process in any such proceeding may be served on either Party anywhere in the world, whether within or without the jurisdiction of any such court. Without limiting the foregoing, each Party agrees that service of process on such Party in accordance with Section 15.10 (Notices) will be deemed effective service of process on such Party. Each of the Parties hereby irrevocably waives any and all right to trial by jury in any such proceeding.

15.3.7 *Tolling*. The Parties agree that all applicable statutes of limitation and time-based defenses (such as estoppel and laches), as well as all time periods in which a Party must exercise rights or perform obligations hereunder, will be tolled once the dispute resolution procedures set forth in this Section 15.3 (Dispute Resolution) have been initiated and for so long as they are pending, and the Parties will c

ooperate in taking all actions reasonably necessary to achieve such a result. In addition, during the pendency of any Dispute under this Agreement initiated before the end of any applicable cure period, including under Section 14.4 (Termination for Material Breach) or Section 14.5 (Termination for Insolvency), (a) this Agreement will remain in full force and effect, (b) the provisions of this Agreement relating to termination for material breach with respect to such Dispute will not be effective, (c) the time periods for cure under Section 14.4 (Termination for Material Breach) or Section 14.5 (Termination for Insolvency) as to any termination notice given prior to the initiation of the applicable dispute resolution procedure will be tolled, (d) any time periods to exercise rights or perform obligations will be tolled; and (e) neither Party will issue a notice of termination pursuant to this Agreement based on the subject matter of the Dispute until such Dispute has been resolved in accordance with the applicable dispute resolution procedure, the outcome of such dispute resolution procedure confirmed the material breach and the existence of the facts claimed by a Party to be the basis for the asserted material breach and all previously tolled cure periods have run; *provided* that if such breach can be cured by (i) the payment of money, the defaulting Party will have an additional [**] within its receipt of the applicable dispute resolution decision, if necessary in addition to the remainder of any applicable previously tolled cure period, to pay such amount or (ii) the taking of specific remedial actions, the defaulting Party will have a reasonably necessary period to diligently undertake and complete such remedial actions within such reasonably necessary period or any specific timeframe established by the applicable dispute resolution decision, as necessary in addition to the remainder of any applicable previously told cure period, before any such notice of termination can be issued.

15.4 **Entire Agreement; Amendments**. This Agreement, together with the SPA, the Supply Agreement and the Pharmacovigilance Agreement, contains the entire understanding of the Parties with respect to the subject matter hereof, and supersedes all previous arrangements with respect to the subject matter hereof, whether written or oral, including, effective as of the Execution Date. This Agreement may be amended, or any term or condition hereof modified, only by a written instrument duly-executed by authorized representatives of both Parties. Any term or condition of this Agreement may be waived if, but only if, such waiver is in writing and signed by an authorized representative of the Party against whom the waiver is to be effective. The Schedules attached hereto may be amended, or any term or conditions hereof modified, only by a written instrument duly-executed by authorized representatives of both Parties.

15.5 **Severability**. If any provision hereof should be held invalid, illegal or unenforceable in any respect in any jurisdiction, then the Parties will substitute valid provisions for such invalid, illegal or unenforceable provisions as may be agreed by the Parties, which valid provisions in their economic effect are sufficiently similar to the invalid, illegal or unenforceable provisions that it can be reasonably assumed that the Parties would have entered into this Agreement with such valid provisions. In case such valid provisions cannot be agreed upon by the Parties, the invalid, illegal or unenforceable nature of one or several provisions of this Agreement will not affect the validity of this Agreement as a whole, unless the invalid, illegal or unenforceable provisions are of such essential importance to this Agreement that it is to be reasonably assumed that the Parties would not have entered into this Agreement without the invalid, illegal or unenforceable provisions.

15.6 **Headings**. The captions to the Sections hereof are not a part of this Agreement, but are merely for convenience to assist in locating and reading the several Sections hereof.

15.7 **Waiver of Rule of Construction**. Each Party has had the opportunity to consult with counsel in connection with the review, drafting and negotiation of this Agreement. Accordingly, the rule of construction that any ambiguity in this Agreement will be construed against the drafting Party will not apply.

15.8 **Interpretation**. Except where the context expressly requires otherwise, (a) the use of any gender herein will be deemed to encompass references to either or both genders, and the use of the singular

will be deemed to include the plural (and vice versa); (b) the words "include", "includes" and "including" will be deemed to be followed by the phrase "without limitation" and will not be interpreted to limit the provision to which it relates; (c) the word "shall" will be construed to have the same meaning and effect as the word "will"; (d) any definition of or reference to any agreement, instrument or other document herein 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); (e) any reference herein to any Person will be construed to include the Person's successors and assigns; (f) the words "herein", "hereof" and "hereunder", and words of similar import, will be construed to refer to this Agreement in each of their entirety, as the context requires, and not to any particular provision hereof; (g) all references herein to Sections or Schedules will be construed to refer to Sections or Schedules of this Agreement, and references to this Agreement include all Schedules hereto and any capitalized terms used but not defined in any Schedules will have their respective meanings as defined in this Agreement; (h) the word "notice" means notice in writing (whether or not specifically stated) and will include notices, consents, approvals and other written communications contemplated under this Agreement; (i) provisions that require that a Party, the Parties or any committee hereunder "agree," "consent" or "approve" or the like will require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, approved minutes or otherwise (but excluding e-mail and instant messaging); (j) references to any specific Law, or article, section or other division thereof, will be deemed to include the then-current amendments thereto or any replacement or successor Law thereof; and (k) the term "or" will be interpreted in the inclusive sense commonly associated with the term "and/or."

15.9 **No Implied Waivers; Rights Cumulative**. No failure on the part of Sage or Biogen to exercise, and no delay in exercising, any right, power, remedy or privilege under this Agreement, or provided by statute or at Law or in equity or otherwise, will impair, prejudice or constitute a waiver of any such right, power, remedy or privilege or be construed as a waiver of any breach of this Agreement or as an acquiescence therein, nor will any single or partial exercise of any such right, power, remedy or privilege preclude any other or further exercise thereof or the exercise of any other right, power, remedy or privilege.

15.10 **Notices**. All notices that are required or permitted hereunder will be in writing and sufficient if delivered (a) personally, (b) sent by reliable electronic transmission (with complete transmission confirmed and confirmed by a hard copy delivered as soon as practicable thereafter by the method described in clauses (c) or (d)), (c) sent by nationally-recognized overnight courier, or (d) sent by registered or certified mail, postage prepaid, return receipt requested, addressed as follows:

If to Sage, to:	Sage Therapeutics, Inc. 215 First Street Cambridge, MA 02142 Attention: Chief Operating Officer (with copy to) General Counsel Email:[**] and [**]
With a copy to (which will not constitute notice):	Gibson Dunn & Crutcher LLP 555 Mission Street San Francisco, CA 94105-0921 Attention: Karen A. Spindler Email: KSpindler@gibsondunn.com
If to Biogen, to:	Biogen MA Inc. 225 Binney Street Cambridge, MA 02142 Attention: Chief Legal Officer Email: [**]
With a copy to (which will not constitute notice):	Ropes & Gray LLP Prudential Tower 800 Boylston Street Boston, MA 02199-3600 Attention: Hannah Freeman Email: [**]

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 such notice will be deemed to have been given: (a) when delivered if personally delivered on a Business Day (or if delivered or sent on a non-Business Day, then on the next Business Day); (b) as of the date transmitted by electronic transmission (with complete transmission confirmed); (c) on the Business Day of receipt if sent by overnight courier or facsimile; or (d) on the Business Day of receipt if sent by mail. Any notice delivered by electronic transmission will be confirmed by a hard copy delivered as soon as practicable thereafter by the method described in clauses (c) or (d) above.

15.11 **Compliance with Export Regulations**. Neither Party will export any technology licensed to it by the other Party under this Agreement except in compliance with U.S. export Laws and regulations.

15.12 **Force Majeure**. Neither Party will be held liable to the other Party nor be deemed to have defaulted under or breached this Agreement for failure or delay in achieving any objective, satisfying any condition, or performing any obligation under this Agreement to the extent that such failure or delay is caused by or results from acts or events beyond the reasonable control of such Party, including acts of God, embargoes, war, acts of war (whether war be declared or not), terrorism, insurrections, riots, civil commotions, strikes, lockouts, or other labor disturbances (other than strikes, lockouts, or labor disturbances involving a Party's own employees), government actions, fire, earthquakes, floods, epidemics, pandemics, the spread of infectious diseases, and quarantines ("**Force Majeure**") beyond such Party's reasonable control and renders the performance impossible or illegal. The Parties agree the effects of the

COVID-19 pandemic that is ongoing as of the Execution Date may be invoked as a Force Majeure for the purposes of this Agreement even though the pandemic is ongoing to the extent those effects are not be reasonably foreseeable by the Parties as of the Execution Date. The affected Party will notify the other Party in writing of any Force Majeure event that may affect its performance under this Agreement as soon as reasonably practical, will provide a good faith estimate of the period for which its failure or delay in performance under this Agreement is expected to continue based on currently available information, and will undertake reasonable efforts necessary to mitigate and overcome such Force Majeure event and resume normal performance of its obligations hereunder as soon a reasonably practicable under the circumstances. If the Force Majeure event continues, then the affected Party will update such notice to the other Party on a weekly basis, or more frequently if requested by the other Party, to provide updated summaries of its mitigation efforts and its estimates of when normal performance under the Agreement will be able to resume.

15.13 **Relationship of the Parties**. This Agreement will not constitute a partnership for any applicable Tax purposes, except as determined under Schedule 15.21 (Tax Partnership Agreement Terms). For the avoidance of doubt, the joint Commercialization will not be considered a partnership or a joint venture for purposes of VAT (in non-United States jurisdictions) unless specifically agreed between the Parties, and no Party will take any action so as to create a VAT establishment for any joint Commercialization activities in any non-United States jurisdiction in the Profit-Share Territory. Except to the extent expressly stated in this Agreement, neither Sage, on the one hand, nor Biogen, on the other hand, will have the authority to make any statements, representations or commitments of any kind, or to take any action, that will be binding on the other, without the prior written consent of the other Party to do so. All persons employed by a Party will be employees of such Party and not of the other Party and all costs and obligations incurred by reason of any such employment shall be for the account and expense of such Party.

15.14 **Performance by BIMA and BIG**. BIG unconditionally guarantees to Sage performance of BIMA's obligations under this Agreement (including all agreements, commitments to perform activities or incur expenditures, undertakings, licenses and payment obligations, now or hereafter entered into pursuant to this Agreement) ("**Guaranteed Obligations**"), and BIMA unconditionally guarantees to Sage performance of BIG's Guaranteed Obligations. Each of BIG and BIMA agrees that the validity of their respective guaranties in this Section 15.14 (Performance by BIMA and BIG) and their respective obligations hereunder will not be terminated, affected, diminished or impaired by reason of the assertion or the failure to assert by Sage against BIMA or BIG any of the rights or remedies reserved to Sage pursuant to the provisions of this Agreement or otherwise or any other remedy or right which such Sage may have at law or in equity or otherwise. The foregoing guarantee will be continuing until all Guaranteed Obligations now existing or hereafter arising have been discharged in full, and shall be and continue to be fully effective notwithstanding any amendment to this Agreement or any of the Guaranteed Obligations (but subject to any changes to the Guaranteed Obligations resulting therefrom). To the extent Sage grants to BIG (a) any waiver of any default by BIMA of the Guaranteed Obligations, (b) any extension of time of performance by BIMA of the Guaranteed Obligations, or (c) any release of BIMA from the performance of the Guaranteed Obligations, Sage will have and be deemed to have also granted the same to BIG hereunder. To the extent Sage grants to BIMA (i) any waiver of any default by BIG of its Guaranteed Obligations, (ii) any extension of time of performance by BIG of its Guaranteed Obligations or (iii) any release of BIG from the performance of its Guaranteed Obligations, Sage will have and be deemed to have also granted the same to BIMA hereunder. The obligations of BIG and BIMA under this Section 15.14 (Performance by BIMA and BIG) will not be subject to any counterclaim, setoff, deduction or defense based on any claim that such guaranteeing party may have against the guaranteed party, or any other person or entity, and will remain in full force and effect without regard to, and will not be released, suspended, abated, deferred, reduced, limited, discharged, terminated or otherwise impaired or adversely affected by any circumstance or occurrence whatsoever, other than full performance of the respective Guaranteed Obligations.

15.15 **Coordination between BIMA and BIG**. It is understood and agreed that any performance due to Biogen by Sage under this Agreement will be deemed rendered to Biogen to the extent such performance by Sage is rendered to either BIMA or BIG, and BIMA and BIG may only look to the other for any share or benefit from Sage's obligations under this Agreement. It is further agreed that BIMA and BIG will not act separately under this Agreement, and with respect to the exercise of the rights of Sage or Biogen under this Agreement, BIMA will be deemed to have the authority to bind both itself and BIG and BIG will be deemed to have the authority to bind both itself and BIMA. BIMA and BIG will be jointly liable for their obligations under this Agreement, and it is understood and agreed that for purposes of Section 14.4 (Termination for Material Breach), an uncured breach by either BIMA or BIG will be deemed a breach by both BIMA and BIG. Without limiting the foregoing, any notice to or from Biogen and any consent, approval, agreement, actions or inactions of Biogen under this Agreement will be deemed notices to or from both BIMA and BIG and consent, approval, agreement, actions or inactions by both BIMA and BIG under this Agreement.

15.16 **Expenses**. Except as otherwise provided herein, all fees, costs and expenses (including any legal, accounting and banking fees) incurred in connection with the preparation, negotiation, execution and delivery of this Agreement and to consummate the transactions contemplated hereby will be paid by the Party hereto incurring such fees, costs and expenses.

15.17 **Counterparts**. The Agreement may be executed in two or more counterparts, including by facsimile or PDF signature pages, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

15.18 **Performance by Affiliates**. Each Party acknowledges and accepts that the other Party may exercise its rights and perform its obligations (including granting or continuing licenses and other rights) under this Agreement either directly or through one or more of its Affiliates. A Party's Affiliates will have the benefit of all rights (including all licenses and other rights) of such Party under this Agreement, but not be subject to such Party's obligation, unless expressly provided herein, or in the case of a permitted assignment, in accordance with Section 15.1 **(**Assignment**)**. Accordingly, in this Agreement "Biogen" will be interpreted to mean "Biogen or its Affiliates" and "Sage" will be interpreted to mean "Sage or its Affiliates" where necessary to give each Party's Affiliates the benefit of the rights provided to such Party in this Agreement and the ability to perform its obligations (including granting or continuing licenses and other rights) under this Agreement; *provided, however,* that in any event each Party will remain responsible for the acts and omissions, including financial liabilities, of its Affiliates.

15.19 **Binding Effect; No Third Party Beneficiaries**. As of the Execution Date, this Agreement will be binding upon and inure to the benefit of the Parties and their respective permitted successors and permitted assigns. Except as expressly set forth in this Agreement, no Person other than the Parties and their respective Affiliates and permitted assignees hereunder will be deemed an intended beneficiary hereunder or have any right to enforce any obligation of this Agreement.

15.20 **Further Assurances**. The Parties agree to reasonably cooperate with each other in connection with any actions required to be taken in furtherance of their respective obligations under this Agreement, including (a) furnishing to each other such further information; (b) executing and delivering to each other such other documents; and (c) doing such other acts and things (including working collaboratively to correct any clerical, typographical, or other similar errors in this Agreement), all as the other Party may reasonably request for the purpose of carrying out the intent of this Agreement.

15.21 Tax Matters.

15.21.1 *Tax Treatment*.

15.21.1.1 The Parties agree to treat the transactions contemplated by this Agreement related to the Profit-Share Territory as a partnership for United States federal and state income Tax purposes between Sage and BIMA (the "**Tax Partnership**"), with Sage and BIMA as partners of the Tax Partnership only upon receipt of Regulatory Approval by the FDA with respect to a Licensed Product to be sold in the Profit-Share Territory; *provided*, *however*, that no Tax Partnership will be treated as being formed if (a) prior to the receipt of such Regulatory Approval by the FDA, Sage exercises its Opt-Out Right with respect to such Licensed Product or (ii) Biogen reasonably determines based on the advice of a nationally recognized tax advisor that the Parties are not required to treat the transactions contemplated by this Agreement as a partnership for U.S. Federal income tax purposes. The Parties shall file all Tax returns consistent with such Tax treatment. The Parties will work together in good faith to execute a written tax partnership agreement for the Tax Partnership between BIMA and Sage that will incorporate the principles of Schedule 15.21 (Tax Partnership Agreement Terms).

15.21.1.2 Unless Biogen notifies Sage in writing that Biogen has determined that Biogen and Sage will not follow the tax treatment set forth in this Section 15.21.1.2 (Tax Treatment), then the Parties agree to treat the transactions contemplated by this Agreement related to the Biogen Territory, including the payment by BIG pursuant to Section 9.11.6.2 (Payment Allocation), as not being a partnership between any of the Parties for any Tax purposes. The Parties agree that BIG shall not be a partner of the Tax Partnership and that the transactions contemplated by this Agreement related to the Biogen Territory shall be treated as occurring outside of, and separate from, the Tax Partnership. The Parties shall file all Tax returns consistent with such Tax treatment.

15.22 HSR Act. Notwithstanding any provision to the contrary in this Agreement, the following provisions of this Agreement will be in full force and effect as of the Execution Date: Article 1 (Definitions), Article 11 (Representations, Warranties and Covenants), Section 14.2 (Termination Prior to Effective Date) and Article 15 (Miscellaneous). The Confidentiality Agreement between Sage and Biogen, dated as of [**], as amended on [**], will continue to be effective and, if the Effective Date occurs, shall terminate on the Effective Date and all information disclosed or exchanged under such agreement will be treated as Confidential Information disclosed under this Agreement. Neither Party shall have the right to terminate this Agreement during any HSR clearance period, unless (a) in the event that the SPA is validly terminated pursuant to Section 9.1 of the SPA prior to Closing as defined in the SPA occurring thereunder, in which case this Agreement will terminate concurrently with the termination of the SPA or (b) Section 14.2 (Termination Prior to Effective Date) applies, and, in each case ((a) or (b)), notwithstanding any provisions that are stated to survive under Section 14.8.2 (Effect of Expiration or Termination; Survival) all provisions of this Agreement will terminate and be of no force or effect whatsoever.

[THE REMAINDER OF THIS PAGE HAS BEEN LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

Sage Therapeutics, Inc.

BY: /s/ Jeff Jonas, M.D.
NAME: Jeff Jonas, M.D.
TITLE: Chief Executive Officer

Biogen MA Inc.

BY: /s/ Michel Vounatsos
NAME: Michel Vounatsos
TITLE: Chief Executive Officer

Biogen International, GmbH

BY: /s/ Fred Lawson
NAME: Fred Lawson
TITLE: Director

[*Signature Page to Collaboration and License Agreement*]

Certain identified information has been excluded from the exhibit because it is both (i) not material and (ii) would likely cause competitive harm to the Company, if publicly disclosed. Double asterisks denote omissions.

STOCK PURCHASE AGREEMENT

This Stock Purchase Agreement (this "**Agreement**") is entered into as of November 27, 2020 (the "**Effective Date**"), by and among Sage Therapeutics, Inc., a Delaware corporation (the "**Company**"), and Biogen MA Inc., a Massachusetts corporation ("**Purchaser**"). The Company and Purchaser are each referred to as a "**Party**" and collectively as the "**Parties**."

RECITALS:

WHEREAS, pursuant to this Agreement, the Company shall issue and sell to Purchaser shares of common stock, par value $0.0001 per share, of the Company (the "**Common Stock**"), which shares shall be issued in accordance with the terms of this Agreement; and

WHEREAS, the Purchaser shall purchase the Shares under the terms of this Agreement.

NOW, THEREFORE, in consideration of the mutual promises, representations, warranties, covenants and conditions set forth in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto hereby agree as follows:

AGREEMENT:

1. PURCHASE AND SALE

1.1 Sale of Shares. Subject to the terms and conditions of this Agreement, at the Closing (as defined below), the Company will issue and sell to the Purchaser, and the Purchaser will purchase from the Company, 6,241,473 shares of Common Stock (the "**Shares**") for an aggregate purchase price of six hundred forty-nine million nine hundred ninety-nine thousand nine hundred and eighty dollars and forty-eight cents ($649,999,980.48) (the "**Purchase Price**"), representing a price per share of $104.14208, which amount is equal to 140% of the daily volume-weighted average per share price of the Common Stock on the Principal Market (as defined below) over the 30 Trading Day (as defined below) period ending on and including the last Trading Day prior to the Effective Date) as reported by Bloomberg Financial L.P. At the Closing, the Purchaser will pay the Purchase Price by wire transfer of immediately available funds in accordance with wire instructions provided by the Company to the Purchaser at least three (3) Trading Days prior to the Closing, and the Company shall instruct Computershare Trust Company, N.A. or any successor thereto (the "**Transfer Agent**") to register the issuance of the Shares via book entry.

All numbers of shares and dollar amounts set forth in this Agreement are subject to appropriate adjustment in the event of any stock split, stock dividend, recapitalization, merger,

consolidation, or similar event affecting such shares.

For purposes of this Agreement, a "**Trading Day**" shall mean each day on which the Principal Market is open for trading, and the "**Principal Market**" shall mean The Nasdaq Global Market (or any nationally recognized successor thereto).

1.2 Closing. The closing of the sale of the Shares (the "**Closing**") shall be held at 12:00 PM Eastern Time on the fifth (5th) Trading Day after the satisfaction of the conditions set forth in Sections 4 and 5 (the "**Closing Date**").

1.3 Company Deliverables. At the Closing, the Company shall deliver to the Purchaser:

(a) a duly executed cross-receipt in form and substance reasonably satisfactory to each Party (the "**Cross-Receipt**");

(b) a certificate in form and substance reasonably satisfactory to the Purchaser and duly executed on behalf of the Company by an authorized officer of the Company, certifying that the conditions to Closing set forth in Section 4 of this Agreement have been fulfilled;

(c) an opinion of Wilmer Cutler Pickering Hale and Dorr LLP, dated as of the Closing Date, in a form reasonably satisfactory to the Purchaser; and

(d) a certificate of the secretary of the Company dated as of the Closing Date certifying that attached thereto is a true and complete copy of all resolutions adopted by the board of directors of the Company (the "**Board of Directors**") authorizing the execution, delivery and performance of this Agreement and the Collaboration and License Agreement, dated as of the Effective Date, between the Company and Purchaser (the "**Collaboration Agreement**") and the transactions contemplated respectively herein and therein and that all such resolutions are in full force and effect and are all the resolutions adopted in connection with the transactions contemplated hereby as of the Closing Date.

1.4 Purchaser Deliverables. At the Closing, the Purchaser shall deliver to the Company:

(a) a duly-executed Cross-Receipt; and

(b) a certificate in form and substance reasonably satisfactory to the Company and duly executed on behalf of the Purchaser by an authorized officer of the Purchaser, certifying that the conditions to Closing set forth in Section 5 of this Agreement have been fulfilled.

2. REPRESENTATIONS AND WARRANTIES OF THE COMPANY

The Company represents and warrants to Purchaser that, subject to exceptions and disclosures set forth in any part or subpart of the Company disclosure schedule (the "Company Disclosure Schedule") corresponding to the particular Section or subsection of this Section 2, or any exceptions or disclosures set forth in any other part or subpart of the Company Disclosure Schedule to the extent it is reasonably apparent from the wording or any such exception or

disclosure that such exception or disclosure is applicable to qualify such representation or warranty, the statements contained in this Section 2 are true and correct.

2.1 Organization and Qualification. The Company is a corporation duly organized, validly existing and in good standing under the Laws of the State of Delaware and has all requisite corporate power and authority to own, lease and operate its properties and assets and to carry on its business as now conducted and as it is described in the SEC Filings (as defined below). The Company is duly qualified to transact business and is in good standing in each jurisdiction in which the failure to so qualify would or would be reasonably expected to have, individually or in the aggregate, a Material Adverse Effect. For purposes of this Agreement, "**Material Adverse Effect**" shall mean any event, circumstance, change or effect, individually or in the aggregate: (a) that is materially adverse to the business, operations, properties or financial condition of the Company, or (b) that materially impairs the Company's ability to perform its obligations pursuant to the transactions contemplated by this Agreement or the Collaboration Agreement; provided that none of the following shall be taken into account in determining whether there is a Material Adverse Effect: (i) any change in the market price or trading volume of the Company's stock, in and of themselves; (ii) any event, circumstance, change or effect in the industries in which the Company or its subsidiaries operates or the United States or European economy generally, in financial markets or in political conditions generally; (iii) any act of terrorism, military action or war (whether or not declared), national or international calamity or similar event, any natural disasters, acts of God or comparable events, epidemic, pandemic or disease outbreak (including the COVID-19 virus), or any escalation or worsening thereof; (iv) any event, circumstance, change or effect arising from or relating to any change in legal requirements or generally accepted accounting principles in the United States ("**GAAP**") (or interpretations of any legal requirements thereof); (v) any study results from clinical trials or preclinical/non-clinical trials of the Company's drug candidates; or (vi) any change or effect attributable to the consummation of the transactions contemplated hereby or by the Collaboration Agreement, or the public announcement of the execution of, this Agreement or the Collaboration Agreement (provided any such public announcement is not in breach of this Agreement or the Collaboration Agreement); provided, that, in the case of each of (ii), (iii) and (iv), solely to the extent that such effects do not have and are not reasonably likely to have a material disproportionate impact on the Company relative to other companies operating in the Company's industry.

2.2 Capitalization.

(a) The authorized capital stock of the Company is as set forth in the SEC Filings. As of October 29, 2020 (the "**Reference Date**"): (i) 52,044,663 shares of Common Stock were issued and outstanding, all of which were validly issued and fully paid, nonassessable and free of preemptive rights; (ii) 8,296,925 shares of Common Stock were issuable (and such number was reserved for issuance) upon exercise of outstanding options to purchase Common Stock or upon settlement of outstanding restricted stock units payable in Common Stock (the "**Equity Awards**") outstanding as of such date; and (iii) no shares of preferred stock, $0.0001 par value per share ("**Preferred Stock**"), were issued and outstanding. The Company has not issued any capital stock since the Reference Date other than shares duly issued pursuant to Equity Awards and other awards approved pursuant to Company equity incentive plans or agreements described in the SEC Filings.

(b) The Company's disclosure of its issued and outstanding capital stock in its most recent SEC Filing containing such disclosure was accurate in all material respects as of the date indicated in such SEC Filing. All of the issued and outstanding shares of the Company's capital stock have been duly authorized and validly issued and are fully paid and nonassessable; none of such shares were issued in violation of any preemptive rights; and such shares were issued in compliance in all material respects with applicable state and federal securities Law and any rights of Third Parties (as defined below). The Shares to be issued in connection with this Agreement, when issued as contemplated herein, will be duly authorized, validly issued, fully paid and nonassessable, will not be in violation of any preemptive rights and will be free and clear of all liens, charges, restrictions, claims, rights of first refusal and encumbrances except as set forth in this Agreement and the Company's certificate of incorporation, bylaws and documents of similar substance (the "**Governing Documents**"). The issuance and sale of the Shares will not obligate the Company to issue shares of Common Stock or other securities to any Person (as defined below) (other than the Purchaser) and will not result in a right of any holder of Company securities to adjust the exercise, conversion, exchange or reset price under any of such securities. For purposes of this Agreement, "**Person**" means any natural person, corporation, unincorporated organization, partnership, association, sole proprietorship, joint stock company, joint venture, limited liability company, trust or government, or Governmental Authority (as defined below), or any other similar entity.

(c) All of the authorized shares of Common Stock are entitled to one (1) vote per share.

(d) The Company is not a party to or subject to any agreement or understanding relating to the voting of shares of capital stock of the Company or the giving of written consents by a stockholder or director of the Company other than agreements entered into in the ordinary course of business and that are not required to be filed as an exhibit to the SEC Filings.

2.3 Authorization; Enforceability.

(a) The Company has all requisite corporate power and authority to execute, deliver and perform this Agreement and to issue and sell the Shares in accordance with the terms hereof.

(b) All corporate action on the part of the Company and its officers and directors necessary for the authorization, execution, delivery and performance of all obligations of the Company under this Agreement and the issuance and sale by the Company of the Shares hereunder has been taken. This Agreement has been duly executed by the Company and constitutes a valid and legally binding obligation of the Company, enforceable in accordance with its terms, except (A) as limited by applicable bankruptcy, insolvency, reorganization, moratorium and other Laws of general application affecting enforcement of creditors' rights generally or by equitable principles and (B) as limited by Laws relating to the availability of specific performance, injunctive relief or other equitable remedies (the "**Equitable Exceptions**"). No action on the part of the Company's stockholders is necessary for the authorization, execution, delivery or performance of the Company's obligations hereunder.

2.4 SEC Filings; Financial Statements.

(a) Since January 1, 2019, the Company has timely filed with or furnished to the Securities and Exchange Commission (the "**SEC**") all registration statements, prospectuses, forms, reports, definitive proxy statements, schedules and documents required to be filed by it under the Securities Act of 1933, as amended, (the "**Securities Act")** or the Exchange Act of 1934, as amended (the "**Exchange Act**"), as the case may be (collectively, the "**SEC Filings**"). Each SEC Filing, as amended or supplemented, if applicable, (i) as of its date, or, if amended, as of the date of the last such amendment, complied in all material respects with the applicable requirements of the Securities Act, the Exchange Act and the Sarbanes-Oxley Act of 2002, as amended (the "**Sarbanes-Oxley Act**"), as the case may be, and the rules and regulations of the SEC thereunder, applicable to such SEC Filing, and (ii) did not, at the time it was filed (or at the time it became effective in the case of registration statements), or, if amended, as of the date of the last such amendment, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading.

(b) Each of the consolidated financial statements (including, in each case, any notes thereto) contained in the SEC Filings, as amended, supplemented or restated, if applicable, was prepared in accordance with GAAP applied (except as may be indicated in the notes thereto and, in the case of unaudited quarterly financial statements, as permitted by the Form 10-Q under the Exchange Act) on a consistent basis throughout the periods indicated (except as may be indicated in the notes thereto), and each presented fairly, in all material respects, the consolidated financial position, results of operations and cash flows of the Company and the consolidated subsidiaries of the Company as of the respective dates thereof and for the respective periods indicated therein (subject, in the case of unaudited quarterly financial statements, to normal year-end adjustments).

(c) The Company has implemented and maintains a system of "internal control over financial reporting" (as defined in Rule 13a-15(f) promulgated under the Exchange Act) that is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements in accordance with GAAP for external purposes and includes policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company, and (iii) provide reasonable assurance regarding the prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements.

(d) The Company has implemented and maintains "disclosure controls and procedures" (as defined in Rule 13a-15(e) promulgated under the Exchange Act) that are designed to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time frames specified by the SEC's rules and forms. The Company has conducted evaluations of the

effectiveness of its disclosure controls and procedures as required by Rule 13a-15 promulgated under the Exchange Act.

2.5 No Conflict; Required Filings and Consents.

(a) The execution and delivery of this Agreement by the Company does not, and the performance of this Agreement by the Company will not, (i) conflict with or violate any provision of the Governing Documents, (ii) assuming that all consents, approvals, authorizations and permits described in the Collaboration Agreement have been obtained, conflict with or violate any Law in any material respect applicable to the Company or by which any property or asset of the Company is bound or affected or (iii) conflict with, or constitute a default (or an event which, with notice or lapse of time or both, would become a default) in any material respect under, or give to others any rights of termination, amendment, acceleration or cancellation of, any "material contract" (as such term is defined in Item 601(b)(10) of Regulation S-K promulgated under the Exchange Act) of the Company.

(b) The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any federal, national, foreign, supranational, state, provincial, municipal, local or other government, governmental, regulatory or administrative authority, agency or commission or any court, tribunal, or judicial or arbitral body of competent jurisdiction ("**Governmental Authority**") or other Person in connection with the execution, delivery and performance by the Company of the issuance and sale of the Shares, other than (i) (A) the HSR Conditions (as defined below), (B) the filing of a Notice of Sale of Securities on Form D with the SEC under Regulation D of the Securities Act, (C) the filing of any requisite notices and/or application(s) to the Principal Market for the issuance and sale of the Shares and the listing of the Shares thereon in the time and manner required thereby, (D) any filing required by the Collaboration Agreement, and (E) those that have been made or obtained prior to the date of this Agreement, or (ii) where failure to obtain such consents, approvals, authorizations or permits, or to make such filings or notifications, would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

2.6 Litigation. Other than as set forth in the SEC Filings, there is no action, suit, proceeding or investigation pending (of which the Company has received notice or otherwise has knowledge) or, to the Company's knowledge, threatened against the Company or which the Company intends to initiate, except where such action, suit, proceeding or investigation, as the case may be, would not reasonably be expected to have a Material Adverse Effect.

2.7 Licenses and Other Rights; Compliance with Laws. The Company has all franchises, permits, licenses and other rights and privileges ("**Permits**") necessary to permit it to own its properties and to conduct its business as presently conducted and is in compliance thereunder, except where the lack of which or the failure to be in compliance thereunder would not reasonably be expected to have a Material Adverse Effect. To the Company's knowledge, the Company has not taken any action that would interfere with its ability to renew all such Permit(s), except where the failure to renew such Permit(s) would not reasonably be expected to have a Material Adverse Effect. The Company is and has been in compliance with all Laws applicable to its business, properties and assets, except where the failure to be in compliance would not reasonably be expected to have a Material Adverse Effect.

2.8 Intellectual Property.

(a) The trademarks, trade names, trade dress, service marks, copyrights, and similar rights (including registrations and applications to register or renew the registration of any of the foregoing), patents and patent applications, trade secrets, and any other similar intellectual property rights ("**Intellectual Property**") that are owned by the Company or its subsidiaries are owned free from any liens or restrictions. All of the Company's material licenses, permits, authorizations, approvals, contracts or consents granted, issued by or with any person relating to the use of Intellectual Property ("**Intellectual Property Licenses**") are in full force and effect in accordance with their terms, and neither the Company, nor to the Company's knowledge, any other party thereto, is in material breach of any such material Intellectual Property License. No event has occurred that (i) with notice or lapse of time or both would constitute a breach or default of any such material Intellectual Property License, (ii) would result in the termination thereof, or (iii) would cause or permit the acceleration or other change of any right or obligation or the loss of any benefit thereunder by the Company or its subsidiaries, except (1) in the case of each of (i)-(iii) above as would not reasonably be expected to have a Material Adverse Effect, or (2) as set forth in any such Intellectual Property License. Except as set forth in the SEC Filings, there is no legal claim or demand of any person pertaining to, or any proceeding that is pending (of which the Company has received notice or otherwise has knowledge) or overtly threatened in writing, (i) challenging the right of the Company in respect of any Intellectual Property of the Company, or (ii) claiming that any default exists under any Intellectual Property License, except, in the case of each of (i) and (ii) above, where any such claim, demand or proceeding would not reasonably be expected to have a Material Adverse Effect.

(b) Except as set forth in the SEC Filings: (i) to the knowledge of the Company, the Company or its subsidiaries own, free and clear of any lien or encumbrance, or have a valid license, or an enforceable right to use, as it is used or held for use, all U.S. and non-U.S. patents, trade secrets, know-how, trademarks, service marks, copyrights, and other proprietary and intellectual property rights, and all grants and applications with respect to the foregoing (collectively, the "**Proprietary Rights**") necessary for the conduct of the Company's business, except where the failure to own or have any of the foregoing would not reasonably be expected to have a Material Adverse Effect (such Proprietary Rights owned by or licensed to the Company collectively, the "**Company Rights**"); and (ii) the Company and its subsidiaries have taken reasonable measures to protect the Company Rights, consistent with prudent commercial practices in the biotechnology industry, except where failure to take such measures would not reasonably be expected to have a Material Adverse Effect.

2.9 Listing and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the SEC is contemplating terminating such registration. The Company is in compliance with the requirements of the Principal Market for continued listing of the Common Stock thereon and has not received any notification that the Principal Market is contemplating terminating such listing. The issuance and sale of the Shares hereunder does not contravene the rules of the Principal Market.

2.10 Offering Exemption. Based in part on the representations of Purchaser set forth in Section 3.2 below, the offer, sale and issuance of the Shares in conformity with the terms of this Agreement are exempt from the registration requirements of the Securities Act and are exempt from the qualification or registration requirements of applicable state securities Laws. Neither the Company nor its Affiliates (as defined below), nor any agent on its or their behalf, (i) has engaged in any form of general solicitation or general advertising (within the meaning of Regulation D under the Securities Act) in connection with the offer and sale of the Shares, (ii) has solicited or will solicit any offers to sell or has offered to sell or will offer to sell all or any part of the Shares to any Person or Persons so as to bring the sale of the Shares by the Company within the registration provisions of the Securities Act or any state securities Laws or (iii) has issued any shares of Common Stock or shares of any series of Preferred Stock or other securities or instruments convertible into, exchangeable for or otherwise entitling the holder thereof to acquire shares of Common Stock which would be integrated with the sale of the Shares to Purchaser for purposes of the Securities Act or of any applicable shareholder approval provisions, including, under the rules and regulations of any exchange or automated quotation system on which any of the securities of the Company are listed or designated, nor will the Company or any of its subsidiaries or Affiliates take any action or steps that would require registration of any of the Shares under the Securities Act.

2.11 Brokers or Finders. The Company has not retained any brokers, consultants or advisors in connection with this Agreement, and has no agreements to pay any commission or compensation in the nature of a finder's or broker's fee arising out of this Agreement or the transactions contemplated hereby.

2.12 Not an Investment Company. The Company is not, and solely after receipt of the Purchase Price, will not be, an "investment company" as defined in the Investment Company Act of 1940, as amended.

2.13 Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Filings, except as specifically set forth in a subsequent SEC Filing filed at least one Trading Day prior to the date of this Agreement: (i) there has been no event, occurrence or development that has had or that would reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not authorized, declared or made any dividend or distribution of cash or other property to the holders of its Common Stock or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock, (iii) the Company has not sold, transferred or otherwise disposed of any of its material assets or rights, and (iv) the Company has not admitted in writing its inability to pay its debts generally as they become due, filed or consented to the filing against it of a petition in bankruptcy or a petition to take advantage of any insolvency act, made an assignment for the benefit of creditors, consented to the appointment of a receiver for itself or for the whole or any substantial part of its property, or had a petition in bankruptcy filed against it, been adjudicated a bankrupt, or filed a petition or answer seeking reorganization or arrangement under the federal bankruptcy Laws or any other Laws of the United States or any other jurisdiction. The Company does not have pending before the SEC any request for confidential treatment of information. Except for the issuance and sale of the Shares contemplated by this Agreement, no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its business, properties, operations, assets or financial

condition, that would be required to be disclosed by the Company under applicable securities Laws if the Company were publicly offering securities pursuant to an effective registration statement under the Securities Act at the time this representation is made that has not been publicly disclosed at least one Trading Day prior to the date that this representation is made.

3. REPRESENTATIONS AND WARRANTIES OF PURCHASER

Purchaser represents and warrants to the Company that the statements contained in this Section 3 are true and correct.

3.1 Authorization; Enforceability. Purchaser has all requisite power and authority to execute, deliver and perform this Agreement. All corporate action on the part of Purchaser and, as applicable, its directors, officers, and shareholders, necessary for the authorization, execution, delivery and performance of all obligations of Purchaser under this Agreement has been taken. This Agreement has been duly executed by Purchaser and constitutes the valid and legally binding obligations of Purchaser, enforceable in accordance with their terms, except as limited by the Equitable Exceptions.

3.2 Investor Representations.

(a) The Shares acquired by Purchaser hereunder will be acquired by Purchaser for its own account for investment purposes and not with a view to distribution in violation of the Securities Act. Purchaser does not presently have any contract, undertaking or agreement with any Person to sell, transfer or grant participation rights to such Person or to any other Person with respect to any of the Shares acquired by Purchaser hereunder.

(b) Purchaser is an "accredited investor" within the meaning of Rule 501(a) promulgated under the Securities Act.

(c) Purchaser understands that the Shares are characterized as "restricted securities" under the federal securities Laws inasmuch as they are being acquired from the Company in a transaction not involving a public offering and that under such Laws and applicable regulations such securities may be resold without registration under the Securities Act only in certain limited circumstances. Purchaser acknowledges and agrees that the Shares must be held indefinitely unless they are subsequently registered under the Securities Act or an exemption from such registration is available or the Company receives an opinion of counsel reasonably satisfactory to the Company that such registration is not required. Purchaser has been advised or is aware of the provisions of Rule 144 promulgated under the Securities Act as in effect from time to time ("**Rule 144**"), which permit limited resale of shares purchased in a private placement subject to the satisfaction of certain conditions.

(d) Purchaser acknowledges and agrees that it can bear the economic risk of its investment in the Shares and has such knowledge and experience in financial or business matters that it is capable of evaluating the merits and risks of the investment in the Shares. Purchaser has been furnished with materials relating to the offer and sale of the Shares that have been requested by Purchaser, and Purchaser has had the opportunity to review the SEC Filings. Purchaser further represents that it has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of the Shares. The foregoing, however, does

not modify, amend or affect Purchaser's right to rely on the truth, accuracy and completeness of the Company's representations and warranties contained in Section 2 of this Agreement.

(e) Purchaser has not agreed to incur, directly or indirectly, any liability for brokerage or finders' fees, agents' commissions or other similar charges in connection with this Agreement or any of the transactions contemplated hereby that would impose any liability of the Company.

(f) Purchaser is not relying and has not relied on any representations or warranties whatsoever regarding the subject matter of this Agreement, express or implied, except for the representations and warranties of the Company set forth in Section 2, subject to the exceptions to such representations and warranties set forth in the Company Disclosure Schedule. Such representations and warranties by the Company constitute the sole and exclusive representations and warranties of the Company in connection with the transactions contemplated by this Agreement and Purchaser understands, acknowledges and agrees that all other representations and warranties of any kind or nature whether express, implied or statutory are specifically disclaimed by the Company.

3.3 Beneficial Ownership. Other than with respect to the Shares that the Purchaser may acquire hereunder, Purchaser does not "beneficially own" (as defined in Regulation 13D-G under the Exchange Act) any Common Stock, including any securities convertible into or exchangeable for Common Stock (including any such securities that cannot be converted or exchanged for more than 60 days from the date hereof).

4. CONDITIONS TO PURCHASER'S OBLIGATIONS AT CLOSING

The obligations of Purchaser under this Agreement to purchase and pay for the Shares are subject to the satisfaction or waiver, at or prior to the Closing, of the following conditions:

4.1 Representations and Warranties. The representations and warranties made by the Company in Section 2.1 (Organization and Qualification), Section 2.2 (Capitalization), Section 2.3 (Authorization; Enforceability), Section 2.10 (Offering Exemptions), Section 2.11 (Brokers or Finders), and Section 2.12 (Not an Investment Company) will be true and correct in all respects as of the Closing Date, except to the extent such representations and warranties are made as of another date, in which case such representations and warranties will be true and correct as of such other date. The representations and warranties made by the Company in Section 2, other than those in Section 2.1, Section 2.2, Section 2.3, Section 2.10, Section 2.11, and Section 2.12 will be true and correct in all respects, as of the Closing Date (except to the extent such representations and warranties are made as of another date, in which case such representations and warranties will be true and correct as of such other date), other than inaccuracies that have not had, and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect (disregarding all qualifications and exceptions contained in such representations and warranties relating to materiality or Material Adverse Effect).

4.2 Covenants. All covenants and agreements contained in this Agreement to be performed or complied with by the Company on or prior to the Closing Date shall have been performed or complied with in all material respects.

4.3 Legal Investment. On the Closing Date, the sale and issuance of the Shares shall be legally permitted by all Laws and regulations to which Purchaser and the Company are subject. No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any Governmental Authority of competent jurisdiction which prohibits the consummation of any of the transactions contemplated by this Agreement.

4.4 HSR Clearance. The HSR Conditions have been satisfied.

4.5 Transfer Agent Instructions. The Company shall have delivered to the Transfer Agent irrevocable written instructions to issue the Shares purchased at the Closing to Purchaser in a form and substance acceptable to such Transfer Agent.

4.6 Listing Qualification. The Principal Market shall have completed its review of the applicable listing of additional shares application and raised no objection to the consummation of the transactions contemplated by this Agreement.

4.7 Collaboration Agreement. The Company shall have duly executed the Collaboration Agreement and it shall be in full force and effect.

4.8 Closing Deliverables. All closing deliverables as required under Section 1.3 shall have been delivered by the Company to Purchaser.

5. CONDITIONS TO THE COMPANY'S OBLIGATIONS AT CLOSING

The obligations of the Company under this Agreement to sell and issue to Purchaser the Shares are subject to the satisfaction or waiver, at or prior to the Closing, of the following conditions:

5.1 Representations and Warranties. The representations and warranties made by Purchaser in Section 3 will be true and correct in all material respects as of the Closing Date, except to the extent such representations and warranties are made as of another date, in which case such representations and warranties will be true and correct in all material respects as of such other date.

5.2 Covenants. All covenants and agreements contained in this Agreement to be performed or complied with by the Purchaser on or prior to the Closing Date shall have been performed or complied with in all material respects.

5.3 Legal Investment. On the Closing Date, the sale and issuance of the Shares shall be legally permitted by all Laws and regulations to which Purchaser and the Company are subject. No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any Governmental Authority of competent jurisdiction which prohibits the consummation of any of the transactions contemplated by this Agreement.

5.4 HSR Clearance. The HSR Conditions have been satisfied.

5.5 Consideration. The Company shall have received immediately available funds in the full amount of the Purchase Price for the Shares being purchased in the Closing hereunder.

5.6 Collaboration Agreement. The Purchaser shall have duly executed the Collaboration Agreement and it shall be in full force and effect.

5.7 Closing Deliverables. All closing deliverables as required under Section 1.4 shall have been delivered by the Purchaser to the Company.

6. COVENANTS

6.1 Sale of Shares. Purchaser covenants and agrees as follows:

(a) Without the prior written consent of the Company, during the period commencing on the Closing Date and, subject to the terms set forth herein, ending eighteen (18) months after the Closing (the "**Initial Holding Period**"), Purchaser will not, and will cause its Permitted Transferees (as defined below) not to, (i) 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, lend or otherwise transfer or dispose of, directly or indirectly, any of the Shares 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 any of the Shares, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of the Shares, in cash or otherwise.

(b) During the period commencing on the day after the expiration of the Initial Holding Period and, subject to the terms set forth herein, ending on the two (2) year anniversary of the Closing (the "**Partial Holding Period**"), subject to the limitations in Section 6.1(d), Purchaser and its Permitted Transferees may take any of the actions set forth in Section 6.1(a)(i) and Section 6.1(a)(ii) with respect to up to an aggregate of [**]% of the Shares, including the transfer, sale or other disposal of such Shares. Each of the Initial Holding Period and the Partial Holding Period are referenced in this Agreement as a "Holding Period."

(c) During the period beginning the day after the expiration of the Partial Holding Period and ending on the date one (1) year from the expiration date of the Partial Holding Period (the "**Fall-Away Period**"), subject to the limitations in Section 6.1(d), Purchaser and any of its Permitted Transferees may transfer, sell or otherwise dispose of any or all of the Shares held by Purchaser or any of its Permitted Transferees, as applicable.

(d) During the Partial Holding Period and the Fall-Away Period, when selling the Shares on the open market or in a block trade, Purchaser and its Permitted Transferees collectively shall be permitted to sell an amount of shares in a single Trading Day not to exceed [**]% of the average daily volume of the Common Stock as traded on the Principal Market for the previous [**] prior to such date (the "**Volume Limitation**"); provided, further, that, Purchaser shall not, and shall cause its Permitted Transferees not to, intentionally sell such Shares in a block trade to any Person that Purchaser or such Permitted Transferee knows (after reasonable inquiry) is a Competitor (as defined below) of the Company. For the purposes of this Agreement, a "**Competitor**" shall mean any operating company with a biopharmaceutical business, or any other Person that directly or indirectly beneficially owns a majority of the voting securities of or voting interests in such a company, or any direct or indirect majority-owned subsidiary of such a company or of such a Person. Notwithstanding the foregoing, this Section 6.1(d) will not preclude, and the

Volume Limitation shall not apply to, sales of the Shares by Purchaser (i) pursuant to Section 6.1(h) or (ii) as part of an Underwritten Offering (as defined below) or a Piggyback Registration after Purchaser has exercised any of its registration rights set forth in Section 6.2.

(e) Notwithstanding the foregoing Sections 6.1(a), 6.1(b), 6.1(c), and 6.1(d), Purchaser may transfer such Shares to a Permitted Transferee; provided that in the case of any transfer or distribution pursuant to and in accordance with the terms of this Section 6.1(e) during a Holding Period or the Fall-Away Period, each Permitted Transferee shall sign and deliver a lock-up letter with terms substantially similar to the terms of this Section 6.1. For the purposes of this Agreement, "**Permitted Transferee**" shall mean (i) a controlled Affiliate of Purchaser that is wholly owned, directly or indirectly, by Purchaser, or (ii) a controlling Affiliate of Purchaser (or any controlled Affiliate of such controlling Affiliate) that wholly owns, directly or indirectly, Purchaser, or the acquiring Person in the case of a Change of Control of Purchaser (replacing references to "Company" with "Purchaser" in the definition of "Change of Control"); it being understood that for purposes of this definition "wholly owned" shall mean an Affiliate in which Purchaser owns, or an Affiliate that owns, as applicable, directly or indirectly, at least ninety-nine percent (99%) of the outstanding capital stock of such Affiliate or Purchaser, as applicable.

(f) Purchaser acknowledges that the Company may issue stop-transfer instructions to its transfer agent with respect to any proposed sale, pledge, or transfer not in compliance with the conditions specified in this Agreement.

(g) Each certificate, instrument, or book entry representing the Shares and any other securities issued in respect of the Shares upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of this clause (g)) be notated with a legend substantially in the following form:

> THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.
>
> THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

Purchaser consents to the Company making a notation in its records and giving instructions to any transfer agent of the Common Stock in order to implement the restrictions on transfer set forth herein. The Company shall cause the legends set forth in this Section 6.1(g) to be removed from any certificate evidencing the Shares (or if the Shares are held in book-entry form, any restrictions on transfer noted with respect thereto shall be removed) no later than two (2) Business Days from receipt of a request from Purchaser following the expiration of the Partial Holding Period or such

earlier date on which the restrictions on dispositions of the Shares terminates in accordance with this Agreement, if: (i) such securities have been resold under an effective registration statement under the Securities Act, (ii) such securities have been or will be transferred in compliance with Rule 144 under the Securities Act, (iii) such securities are eligible for resale pursuant to Rule 144(b)(1)(i) under the Securities Act or (iv) the Investor shall have provided the Company with an opinion of counsel, reasonably satisfactory to the Company, stating that such securities may lawfully be transferred without registration under the Securities Act.

(h) Notwithstanding any other provision of this Section 6.1, this Section 6.1 shall not prohibit or restrict any disposition of Common Stock by Purchaser (i) to the Company, (ii) in connection with a Change of Control of the Company (as defined below), or (iii) in connection with (A) a bona fide tender offer by a Person other than Purchaser or the Company or (B) an issuer tender offer by the Company; provided, that in the event that any such tender offer is not completed, the Shares shall remain subject to the restrictions contained in this Section 6.1. For the purposes of this Agreement, a "**Change of Control**" means the transfer, in one transaction or a series of related transactions, to a Person or group of affiliated Persons, of shares of capital stock of the Company if, after such transfer, the stockholders of the Company immediately prior to such transfer do not own at least a majority of the outstanding voting securities of the Company (or the surviving entity).

6.2 Registration Rights.

(a) Demand Registration Rights.

(i) Short-Form Registration. At any time within the [**] period following the expiration of the Initial Holding Period (such period, the "**Registration Period**"), when the Company is eligible to use Form S-3, Purchaser shall be entitled to request, and the Company shall use commercially reasonable efforts to cause, registration under the Securities Act of the resale of all or part of the Registrable Shares (as defined below) that are no longer subject to a Holding Period under Section 6.1 of this Agreement, on Form S-3 or any similar short-form registration statement (a "**Short-Form Demand Registration Statement**"); provided, however, that with respect to any request under this Section 6.2(a)(i), so long as the market value of all remaining Registrable Shares at the time of the request exceeds the lesser of (i) $[**] or (ii) 100% of the aggregate Purchase Price of the Shares issued and sold under this Agreement, in each case based on the then-current market price of the Common Stock (such lesser amount, the "**S-3 Floor**"), such request shall cover Registrable Shares worth at least the S-3 Floor. Upon receipt of a written request for a Short-Form Demand Registration, the Company will use its commercially reasonable efforts to (i) cause the Short-Form Demand Registration Statement to be filed with the Commission as soon as practicable, but in no event more than [**], after receiving the request and (ii) effect the registration under the Securities Act. A registration requested pursuant to this Section 6.2(a)(i) is referred to herein as a "**Short-Form Demand Registration**."

(ii) Shelf Registration.

A. At any time the Company is eligible to use a Short-Form Demand Registration Statement and within the Registration Period, Purchaser shall be entitled to request that the Company file a shelf registration statement on Form S-3 (provided that in the event

the Company is a well-known seasoned issuer as defined by Rule 405 promulgated under the Securities Act at the time of the filing of such registration, such registration will be an automatic shelf registration statement), to register the resale of all or part of the Registrable Shares that are no longer subject to a Holding Period under Section 6.1 of this Agreement, pursuant to Rule 415 promulgated under the Securities Act (including the prospectus, amendments and supplements to the shelf registration statement or prospectus, including pre- and post-effective amendments, all exhibits thereto and all material incorporated by reference or deemed incorporated by reference, if any, in such shelf registration statement) (the "**Shelf Registration Statement**" and, together with the Short-Form Demand Registration Statement, the "**Demand Registration Statements**"). A registration requested pursuant to this Section 6.2(a)(ii)(A), including a shelf takedown from a Shelf Registration Statement, is referred to herein as a "**Shelf Demand Registration**" (and, together with the Short-Form Demand Registration, the "**Demand Registrations**").

B. The Company shall use commercially reasonable efforts to cause the Shelf Registration Statement to (i) be filed with the Commission as soon as practicable, but in no event more than [**], after receiving the Shelf Demand Registration request and (ii) become or be declared effective by the Commission as soon as practicable after such filing, and shall use commercially reasonable efforts to keep the Shelf Registration Statement effective, from the date such Shelf Registration Statement becomes effective until the earlier to occur of (x) the first date as of which all of the Registrable Shares included in the Shelf Registration Statement have been sold or (y) [**] after such date of effectiveness.

C. Purchaser shall be limited to an aggregate total of [**] Demand Registrations; provided (i) the number of shelf takedowns that are not Underwritten Offerings shall not be limited, and (ii) subject to Section 6.2(a)(vi), each Demand Registration shall be an Underwritten Offering if Purchaser so advises the Company as a part of its request to file a Demand Registration Statement. For the purposes of this Agreement, an "**Underwritten Offering**" shall mean an offering registered under the Securities Act in which securities of the Company are sold to one or more underwriters on a firm-commitment basis for reoffering to the public, and the plan of distribution contemplates a customary "road show" (including an "electronic road show") or other substantial marketing effort by the Company and the underwriters.

(iii) Payment of Expenses for Demand Registrations. The Company will pay all Registration Expenses (as defined below) for the Demand Registrations permitted under Sections 6.2(a)(i) and 6.2(a)(ii). Other than as provided by this Section 6.2(a)(iii) and Section 6.2(c), a registration will not count as a Demand Registration until the registration statement has become effective and, with respect to an underwritten shelf takedown, the prospectus supplement for such offer has been filed with the Commission; provided, however that if Purchaser fails to reimburse the Company for reasonable and documented Registration Expenses with respect to a withdrawn Demand Registration in accordance with Section 6.2(c), Purchaser shall forfeit such withdrawn Demand Registration.

(iv) Priority. In the case of an Underwritten Offering, if the managing underwriters with respect to a Demand Registration advise the Company in writing that, in their opinion, the inclusion of the number of Registrable Shares and other securities to be included in such underwritten offering creates a substantial risk that the price per share will be materially

reduced, the number of securities that in the opinion of such underwriters can be sold without creating such risks shall be allocated to Purchaser on a *pari passu* basis with each other holder of other securities having registration rights, on a pro rata basis based on the total number of securities held by such Person. Notwithstanding the foregoing, in no event will a Demand Registration pursuant to Sections 6.2(a)(i) and 6.2(a)(ii) count as a Demand Registration for purposes of Section 6.2(a)(ii)(C) unless (i) all Registrable Shares requested to be registered in such Demand Registration by Purchaser are, in fact, registered in such registration if the offering is not underwritten, or (ii) at least [**] percent ([**]%) of all Registrable Shares requested to be registered in such Demand Registration by Purchaser are, in fact, registered in such registration if the offering is underwritten.

(v) Restrictions.

A. The Company will not be obligated to effect any Demand Registration within [**] after the effective date of (i) a previous Demand Registration Statement; or (ii) a previous Piggyback Registration Statement (as defined below) under which the Stockholder requesting the Demand Registration had piggyback rights pursuant to Section 6.2(b) below wherein Purchaser was permitted to register and sold at least [**]% of the Registrable Shares included in such Piggyback Registration Statement (as defined below). Further, the Company will not be obligated to effect any Demand Registration pursuant to this Section 6.2(a) if the requested Demand Registration Form is not available for such offering contemplated by Purchaser or if the Company would be required to qualify to do business or to execute a general consent to service of process in any particular jurisdiction where it is not already so qualified in effecting such registration.

B. The Company may postpone the filing of a Demand Registration Statement for a reasonable "blackout period" not in excess of [**] (and the time periods with respect to filing or effectiveness thereof shall be tolled correspondingly), if (i) the Board of Directors determines in good faith that such registration or offering would be reasonably likely to materially interfere with a bona fide business, financing or business combination transaction of the Company or is reasonably likely to require premature disclosure of material non-public information, which premature disclosure could materially and adversely affect the Company, (ii) such registration would require the Company to recast its historical financial statements or prepare pro forma financial statements, acquired business financial statements or other information, with which requirement the Company is reasonably unable to comply, or (iii) render the Company unable to comply with requirements under the Securities Act or the Exchange Act.

(vi) Selection of Underwriters. In connection with any underwritten Demand Registration, Purchaser shall have the right to (i) determine the plan of distribution and (ii) select the investment banker or bankers and managers to administer the offering, including the lead managing underwriter; provided that the selection of such investment banker or bankers and managers shall be subject to the approval of the Company, which approval shall not be unreasonably withheld or delayed.

(b) Piggyback Registrations.

(i) Right to Piggyback. At any time during the Registration Period, whenever the Company proposes to register the issuance or sale of any of its Common Stock under the Securities Act for its own account or otherwise (including the registration of shares of Common Stock on behalf of other holders), and the registration form to be used may be used for the registration of the resale of Registrable Shares (each, a "**Piggyback Registration**") (except for the registrations on Form S-8 or Form S-4 or any successor form thereto) (a "**Piggyback Registration Statement**"), the Company will give written notice, at least [**] prior to the proposed filing of such registration statement, to Purchaser of its intention to effect such a registration and will use commercially reasonable efforts to include in such registration all Registrable Shares that are no longer subject to a Holding Period under Section 6.1 of this Agreement (in accordance with the priorities set forth in Sections 6.2(b)(ii) and (b)(iii) below) with respect to which the Company has received written requests for inclusion, which request shall specify the number of such Registrable Shares desired to be registered and be delivered within [**] after the delivery of the Company's notice. The Company may postpone or withdraw the filing or the effectiveness of a Piggyback Registration Statement at any time in its sole discretion.

(ii) Priority on Primary Registrations. If a Piggyback Registration is an underwritten primary offering on behalf of the Company and the managing underwriter(s) thereof advise the Company in writing that a limitation on the number of shares of Common Stock which may be included in the registration statement is necessary because, in such underwriter(s)' judgment, marketing or other factors dictate such limitation is necessary to facilitate public distribution, then the managing underwriter(s) and the Company may exclude only such number of securities (including Registrable Shares) from the registration and the underwriting that the managing underwriter(s) advise the Company is necessary to facilitate public distribution, and the number of securities that may be included in such registration and underwriting shall include: (i) first, any securities that the Company proposes to sell, and (ii) second, *pari passu* among Purchaser and each other holder of other securities having registration rights that has requested securities be included in such registration, on a pro rata basis based on the total number of Registrable Shares held by Purchaser and the total number of any other securities held by other holders having registration rights.

(iii) Priority on Secondary Registrations. If a Piggyback Registration is an underwritten secondary offering on behalf of holders of the Company's securities and the managing underwriter(s) thereof advise the Company in writing that a limitation on the number of shares of Common Stock which may be included in the registration statement is necessary because, in such underwriter(s)' judgment, marketing or other factors dictate such limitation is necessary to facilitate public distribution, then the managing underwriter(s) and the Company, the Company will include in such registration the maximum aggregate number of Registrable Shares requested to be included therein by Purchaser and other registrable securities requested to be included therein by other holders having registration rights that the managing underwriter(s) advise the Company can be included such that no further limitation is necessary to facilitate public distribution, on a pro rata basis based on the total number of Registrable Shares held by Purchaser hereunder and the total number of registrable securities held by such other holders having registration rights.

(iv) Selection of Underwriters. In connection with any underwritten Piggyback Registration initiated by the Company, the Company shall have the sole and exclusive right to (i) determine the plan of distribution and (ii) select the investment banker or bankers and

managers to administer the offering, including the lead managing underwriter. If Purchaser disapproves of the terms of any such underwriting, Purchaser may elect to withdraw therefrom by written notice to the Company and the underwriter, delivered at least three (3) days prior to the effective date of the registration statement.

(v) Payment of Expenses for Piggyback Registrations. The Company will pay all Registration Expenses for the Piggyback Registrations under this Section 6.2(b).

(c) Registration Expenses. Other than as provided by Section 6.2(a)(iii), the Company will pay all expenses incurred by the Company incident to the Company's registration obligations under this Agreement, including: all registration and filing fees; fees and expenses of compliance with securities or blue sky Laws; fees and expenses associated with listing the Registrable Shares on any securities exchange or market; fees and expenses incurred in connection with the Financial Industry Regulatory Authority (FINRA) and rating agencies; costs and expenses related to analyst and investor presentations and "roadshows"; printing expenses; messenger and delivery expenses; and fees and disbursements of counsel for the Company; fees and disbursements of the Company's registered public accounting firm (including with respect to "comfort letters"); reasonable fees and disbursements of all other Persons retained by the Company; and any other fees and disbursements customarily paid by issuers of securities (all such expenses being herein called "**Registration Expenses**"); provided, however, that, as between the Company and Purchaser, underwriting discounts, commissions, transfer taxes and underwriter fees and disbursements (in connection with an underwritten Demand Registration) relating to the Registrable Shares will be borne by Purchaser. Notwithstanding the foregoing, if a request for Demand Registration for which the Company is obligated to pay all Registration Expenses pursuant to Section 6.2(a)(iii) and this Section 6.2(c)(i) is subsequently withdrawn at the request of Purchaser, Purchaser shall forfeit such Demand Registration unless Purchaser pays (or reimburses the Company) for all reasonable and documented Registration Expenses with respect to such withdrawn Demand Registration; provided that if, at the time of such withdrawal, Purchaser shall have learned of a material adverse change in the condition, business, or prospects of the Company from that known to Purchaser at the time of its request and has withdrawn the request with reasonable promptness after learning of such information, then Purchaser shall not be required to pay any of such expenses and shall not forfeit its right to such Demand Registration.

(d) Registrable Shares. For the purposes of this Section 6.2, "**Registrable Shares**" shall mean the Shares held by Purchaser including any shares of Common Stock paid, issued or distributed in respect of any such Shares by way of stock dividend, stock split or distribution, or in connection with a combination of shares, recapitalization, reorganization, merger or consolidation, or otherwise, but excluding shares of Common Stock acquired in the open market before or after the date hereof, provided, however, that the Shares will cease to be "Registrable Shares" when the Shares have been sold pursuant to an effective registration statement or distributed to the public pursuant to Rule 144 (or any successor provision then in effect).

6.3 Notifications.

(a) Prior to the Closing, the Company will promptly advise Purchaser in writing of any notice or other communication from any Third Party alleging that the consent of a Third Party is required in connection with the transactions contemplated by this Agreement.

(b) Prior to the Closing, each Party shall promptly notify the other of any action, suit or proceeding that is instituted or specifically threatened in writing against such Party to restrain, prohibit or otherwise challenge the legality of any transaction contemplated by this Agreement.

6.4 Standstill. During the period commencing on the Effective Date and ending on the earliest of: (i) the Standstill Termination Date (as defined below), (ii) the date on which any Third Party unaffiliated with Purchaser commences a tender offer or exchange offer for more than 50% of the Company's outstanding Common Stock, and (iii) the date the Company publicly announces its intent to consummate a Change of Control (the "**Standstill Period**"), neither the Purchaser nor any of Purchaser's Representatives will, in any manner, directly or indirectly:

(a) make, effect, initiate or cause (i) any acquisition of beneficial ownership, directly or indirectly, of any securities of the Company or any securities of any subsidiary of the Company other than as contemplated in Section 1.1, (ii) any acquisition of any assets of the Company or any assets of any subsidiary of the Company, (iii) any tender offer, exchange offer, merger, business combination, recapitalization, restructuring, liquidation, dissolution or extraordinary transaction involving the Company or any subsidiary of the Company, or involving any securities or assets of the Company or any securities or assets of any subsidiary of the Company or (iv) any "solicitation" of "proxies" (as those terms are used in the proxy rules of the SEC) or consents with respect to any securities of the Company; provided that any investment in third-party mutual funds or other similar passive investment vehicles that hold interests in securities of the Company or any of its subsidiaries shall not be taken into account for the purpose of this subparagraph;

(b) form, join or participate in a "group" (as defined in the Exchange Act and the rules promulgated thereunder) with respect to the beneficial ownership of any securities of the Company;

(c) act, alone or in concert with others, to seek to control or influence the management, the Board of Directors or policies of the Company;

(d) take any action that might require the Company to make a public announcement regarding any of the types of matters set forth in clause "(a)" of this Section 6.4;

(e) agree or offer to take, or encourage or propose (publicly or otherwise) the taking of, any action referred to in clause "(a)", "(b)", "(c)" of this Section 6.4;

(f) assist, induce or encourage any other Person to take any action of the type referred to in clause "(a)", "(b)", "(c)", or "(d)" of this Section 6.4;

(g) enter into any discussions, negotiations, arrangement or agreement with any other Person relating to any of the foregoing; or

(h) request or propose that the Company amend, waive or consider the amendment or waiver of any provision set forth in this Section 6.4.

Notwithstanding the foregoing, it is understood and agreed that Purchaser shall not be prohibited from entering into an agreement and having discussions with legal, accounting or financial advisors for the limited purposes of evaluating any of the transactions contemplated by this Section 6.4, and Purchaser may initiate private discussions with, and submit proposals confidentially to, the Chief Executive Officer of the Company regarding a transaction otherwise prohibited by this Section 6.4; provided, however, that any such proposal shall be expressly conditioned on approval of the Board of Directors and will not reasonably be expected to require public disclosure. For the purposes of this Agreement, the "**Standstill Termination Date**" shall mean the first to occur of: (i) [**]; (ii) the date one (1) year following the effective date of the termination of the Collaboration Agreement; and (iii) the seventh anniversary of the Effective Date (with "Regulatory Approval," "FDA," "Licensed 217 Product," and "MDD" having the definitions given them in the Collaboration Agreement).

6.5 Voting Agreement.

(a) If the Company and its Chief Executive Officer and/or Chief Operating Officer, in their capacities as officers of the Company (each, a "**Proxyholder**" and, collectively, the "**Proxyholders**"), instruct Purchaser and/or any of its Permitted Transferees in writing to vote in favor of, or against, any matter, action, ratification or other event for which approval of the holders of the Company's stock is sought (either by vote or written consent) or upon which such holders are otherwise entitled to vote, including the election of directors, but excluding any Extraordinary Matter (as defined below) (collectively, a "**Company Stockholder Matter**"), then Purchaser, after receiving proper notice of any meeting of stockholders of the Company related to such Company Stockholder Matter (or, if no notice is required or such notice is properly waived, after notice from a Proxyholder is given), will, and will cause any Permitted Transferees to, (i) be present, in person or by proxy, as a holder of Shares at all such meetings and be counted for the purposes of determining the presence of a quorum at such meetings and (ii) vote (in person, by proxy or by action by written consent, as applicable) all Shares as to which Purchaser or Permitted Transferee, as applicable, has beneficial ownership or as to which Purchaser or Permitted Transferee otherwise exercises voting or dispositive authority in the manner directed by a Proxyholder.

(b) Extraordinary Matters. Purchaser and any Permitted Transferee may vote or execute a written consent with respect to, any or all of the voting securities of the Company as to which it is entitled to vote or execute a written consent, as it may determine in its sole discretion, with respect to the following matters, if presented to the Company's stockholders for approval (each such matter being an "**Extraordinary Matter**"):

(i) any transaction which would result in a Change of Control of the Company;

(ii) any issuance of Common Stock that represents more than 20% of the then-outstanding Common Stock;

(iii) the entry into any licensing, partnering, partnership, collaboration, research and development, joint venture or other commercial agreement;

(iv) the payment of any dividends to any class of stockholders of the Company; and

(v) any liquidation or dissolution of the Company.

(c) Appointment of Proxy. To secure such obligations to vote the Shares in accordance with this Agreement and to comply with the other terms hereof, Purchaser hereby appoints, and shall cause each Permitted Transferee to appoint, each Proxyholder, or any of their designees, as such Person's true and lawful proxy and attorney, with the power to act alone and with full power of substitution, to vote or act by written consent with respect to all of such Person's Shares in accordance with the provisions set forth in this Agreement, and to execute all appropriate instruments consistent with this Agreement on behalf of such Person. The proxy and power granted by Purchaser and each Permitted Transferee pursuant to this Section 6.5 are coupled with an interest and are given to secure the performance of such Person's duties under this Agreement. Each such proxy and power will be irrevocable until the agreements contained in this Section 6.5 expire in accordance with Section 6.5(e). The proxy and power will survive the merger, consolidation, conversion or reorganization of Purchaser or such Permitted Transferee, as applicable, or any other entity holding any Shares. For the avoidance of doubt, the proxy granted by this Section 6.5 shall not apply to any Extraordinary Matter.

(d) No Revocation. The voting agreements contained in this Section 6.5 are coupled with an interest and may not be revoked prior to their expiration in accordance with Section 6.5(e).

(e) Expiration of Voting Agreement. The agreements contained in this Section 6.5 will expire (i) in part, solely with respect to any Shares sold by Purchaser or a Permitted Transferee, as applicable, in an arm's length sale to a non-Affiliate in compliance with this Agreement upon the execution of the sale of such Shares, and (ii) as a whole on the earliest to occur of:

(i) the [**] year anniversary of the Effective Date;

(ii) the Standstill Termination Date;

(iii) the date on which the beneficial ownership of the Purchaser and its Affiliates collectively falls below [**]% of the shares of the Company's then-outstanding Common Stock;

(iv) a Change of Control;

(v) any liquidation or dissolution of the Company; and

(vi) the date the Collaboration Agreement is terminated.

6.6 Commercially Reasonable Efforts. Each Party will use its commercially reasonable efforts to satisfy in a timely fashion each of the conditions to be satisfied by it under Sections 4 through 7 (inclusive) of this Agreement.

6.7 Listing of Common Stock. The Company hereby agrees to use commercially reasonable efforts to maintain the listing or quotation of the Common Stock on the Principal Market for so long as the Purchaser holds Registrable Shares.

6.8 Tax Treatment. Each Party agrees that the Purchase Price is being paid in exchange for the Shares in a transaction described in Section 1032 of the Internal Revenue Code of 1986, as amended (and any analogous state or local tax law) and neither Party will take a position inconsistent with such treatment.

7. ADDITIONAL COVENANTS

7.1 Definitions. The following terms shall apply with respect to this Section 7 and as used elsewhere in this Agreement:

(a) "**Affiliate**" means, with respect to a Person, any other Person that (directly or indirectly) controls, is controlled by, or is under common control with, such Person, whether now or in the future. For purposes of this Agreement, a Person will be deemed to control another Person if it owns or controls, directly or indirectly, fifty percent (50%) or more of the equity securities of such other Person entitled to vote in the election of directors (or, in the case that such other Person is not a corporation, for the election of the corresponding managing authority), or otherwise has the power to direct, or cause the direction of, the management and policies of such other Person, whether through ownership of voting securities, by contract, or otherwise. The Parties acknowledge that in the case of certain entities organized under the Laws of certain countries outside the United States, the maximum percentage ownership permitted by Law for a foreign investor may be less than fifty percent (50%), and that in such case such lower percentage will be substituted in the preceding sentence; provided that such foreign investor has the power to direct the management and policies of such entity. For clarity, a Person may be or become an Affiliate of another Person and may cease to be an Affiliate of such Person, in each case, during the Term of this Agreement.

(b) "**Business Day**" means a day other than a Saturday, Sunday or a bank or other public holiday in Massachusetts, United States.

(c) "**DOJ**" means the U.S. Department of Justice.

(d) "**FTC**" means the United States Federal Trade Commission or any successor agency thereto.

(e) "**HSR Act**" means the Hart Scott Rodino Antitrust Improvements Act of 1976, as amended, and the rules promulgated thereunder.

(f) **"HSR Conditions"** means the following collective conditions, to the extent applicable: (a) any applicable mandatory waiting period under the HSR Act will have expired or earlier been terminated; (b) no injunction (whether temporary, preliminary, or permanent) prohibiting consummation of the transaction contemplated by this Agreement or the Collaboration Agreement or any material portion hereof will be in effect; and (c) no judicial or administrative proceeding opposing consummation of all or any part of the Collaboration Agreement or this Agreement will be pending.

(g) **"HSR Filing"** means filings with the FTC and the Antitrust Division of DOJ of a Notification and Report Form for Certain Mergers and Acquisitions (as that term is defined in the HSR Act) with respect to the relevant subject matter of the Collaboration Agreement or this Agreement, together with all required documentary attachments thereto.

(h) "**Laws**" means all applicable laws, statutes, rules, regulations, orders, judgments, injunctions, ordinances or other pronouncements having the binding effect of law of any Governmental Authority, including if either Party is or becomes subject to a legal obligation to a Regulatory Authority or other Governmental Authority (such as a corporate integrity agreement or settlement agreement with a Governmental Authority).

(i) "**Third Party**" means any Person other than Purchaser, the Company or their respective Affiliates.

7.2 HSR Filings. The Company and Purchaser will each file any required HSR Filings with the FTC and the Antitrust Division of the DOJ under the HSR Act with respect to the subject matter of the transactions contemplated hereby within ten (10) Business Days following the Effective Date. The Parties will (i) cooperate with one another to the extent necessary in the preparation and execution of all documents that are required to be filed pursuant to the HSR Filings; and (ii) seek early termination of the applicable waiting period. Each Party will be responsible for its own costs and expenses associated with any required HSR Filings. One-half of any filing fees incurred by either Party in connection with the HSR Filings shall be paid by each of the Company and Purchaser.

7.3 Efforts. The Company and Purchaser each agree to use reasonable efforts to secure, and not to take any action reasonably expected to have the effect of delaying, impairing, or impeding, the early termination or expiration of any waiting periods under the HSR Act for the transactions contemplated hereby. The Parties will each cooperate reasonably with one another in connection with resolving any inquiry or investigation by the DOJ or FTC relating to their respective HSR Filings or the transactions contemplated hereby. To the extent permitted under applicable Law and by the applicable governmental authorities, the Parties shall (a) provide each other reasonable advance written notice of any meetings or telephone conferences with a Governmental Authority under the HSR Act relating to the transactions contemplated hereby, and (b) if permitted by Law, permit each other to attend and participate in those meetings and telephone conferences. Each Party shall (i) provide the other with reasonable opportunity to review and comment on any written submissions, and shall consider comments in good faith, and (ii) keep the other Party reasonably apprised of the status of any communications with, and any inquiries or requests for information from, any Governmental Authority under the HSR Act, regardless of whether such other Party declines to participate in any meetings or telephone conferences;

provided that neither Party will be obligated to disclose to the other Party any commercially sensitive or privileged information, and to the extent the Parties agree to share information of this nature, such exchange and review will be limited to the Parties' outside counsel only. Notwithstanding any provision to the contrary set forth in this Agreement, nothing in this Agreement will require either Party or any of its Affiliates to disclose to the other Party or any of its Affiliates any information that is subject to obligations of confidentiality or non-use owed to Third Parties.

7.4 No Antitrust Undertakings. Notwithstanding anything to the contrary in this Agreement, the term "reasonable efforts" as used in this Section 7 does not require that either Party (a) offer, negotiate, commit to, or effect, by consent decree, hold separate order, trust, or otherwise, the sale, divestiture, license, or other disposition of any capital stock, assets, rights, products or businesses of such Party or any of its Affiliates, (b) agree to any restriction on the activities of such Party or any of its Affiliates, or (c) pay any material amount, or take any other action to prevent, effect the dissolution of, vacate, or lift any decree, order, judgment, injunction, temporary restraining order, or other order in any suit, or proceeding that would otherwise have the effect of preventing or delaying any of the transactions contemplated by this Agreement.

8. SURVIVAL OF REPRESENTATIONS

All representations and warranties made by a Party to this Agreement herein or pursuant hereto shall survive the Closing and the delivery of the Shares for a period of 12 months thereafter. All covenants and other agreements made by a Party to this Agreement herein or pursuant hereto shall survive until all obligations set forth therein shall have been performed or satisfied or they shall have terminated in accordance with their terms.

9. TERMINATION

9.1 Termination. This Agreement may be terminated at any time until the Closing:

(a) by the mutual written consent of Purchaser and the Company;

(b) by either the Company or Purchaser, upon written notice to the other, if the HSR Conditions have not been satisfied on or before the date that is six (6) months after the date of this Agreement; or

(c) by either Purchaser or the Company, upon written notice to the other, in the event that any court of competent jurisdiction or Governmental Authority shall have issued an order, decree or ruling or taken any other action restraining, enjoining or otherwise prohibiting the actions contemplated hereby and such order, decree, ruling or other action shall have become final and nonappealable;

provided that the right to terminate this Agreement under Section 8.1(b) or (c) shall not be available to any Party if the failure of such Party to perform or comply with its obligations under this Agreement or the Collaboration Agreement has been the principal cause for the issuance of such order, decree, ruling or action.

9.2 Automatic Termination. This Agreement shall terminate automatically in the event that the Collaboration Agreement is terminated prior to the Closing.

9.3 Effect of Termination. In the event of any termination of this Agreement as provided in Section 8.1 and Section 8.2, this Agreement (other than Sections 2, 3, 6, 7 and 9, which shall remain in full force and effect in accordance with their terms) shall forthwith become wholly void and of no further force and effect; provided that nothing herein shall relieve any Party from liability for willful breach of this Agreement.

10. GENERAL

10.1 Successors and Assigns. Except as otherwise provided herein, the terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and permitted assigns of the Parties (including any permitted transferees of any Shares). Purchaser and the Company may not assign their respective rights or obligations under this Agreement, in whole or in part, except with the consent of the other Party; provided, however, that, after the Closing, Purchaser may assign this Agreement together with all of the Shares it then owns to any wholly-owned subsidiary and any such assignee may assign this Agreement together with all of the Shares it then owns to Purchaser or any other subsidiary wholly-owned by Purchaser. Any attempted assignment made in contravention of this Agreement shall be null and void and of no force or effect.

10.2 Entire Agreement. This Agreement and the Collaboration Agreement and the documents, schedules and exhibits referred to herein or therein constitute the entire agreement between the Parties and supersede all prior communications, representations, understandings and agreements of the Parties with respect to the subject matter hereof and thereof, including, for the avoidance of doubt, the standstill provisions of the Confidentiality Agreement between the Company and Biogen Inc., dated as of [**], as amended on [**]. No Party shall be liable or bound to any other Party in any manner by any warranties, representations or covenants except as specifically set forth herein or therein. All schedules and exhibits hereto are hereby incorporated herein by reference. Nothing in this Agreement, express or implied, is intended to confer upon any Third Party any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.

10.3 General Interpretation. The terms of this Agreement have been negotiated by the Parties hereto and the language used in this Agreement shall be deemed to be the language chosen by the Parties hereto to express their mutual intent. This Agreement shall be construed without regard to any presumption or rule requiring construction against the Party causing such instrument or any portion thereof to be drafted, or in favor of the Party receiving a particular benefit under this Agreement. No rule of strict construction will be applied against any Person.

10.4 Injunctive Relief. Purchaser and the Company acknowledge and agree that monetary damages may be insufficient for any breach by Purchaser or the Company of any of their respective covenants in this Agreement. Accordingly, each Party agrees that in the event of any breach or threatened breach by the other Party of any provisions of this Agreement, the non-breaching Party be entitled to seek equitable relief in the form of an order to specifically perform or an injunction to prevent irreparable injury.

10.5 Governing Law. This Agreement shall be governed by and construed in accordance with the Laws of the State of Delaware, without regard to the principles of conflicts of Law thereof.

10.6 Jurisdiction. The Parties hereby irrevocably and unconditionally submit to the jurisdiction of the United States District Court for the Southern District of New York for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement.

10.7 Counterparts. This Agreement may be executed in any number of counterparts and by the Parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement, and may be delivered to the other Party hereto by facsimile.

10.8 Section Headings and References. The section headings contained herein are for the convenience of the Parties and in no way alter, modify, amend, limit or restrict the contractual obligations of the Parties. When a reference is made in this Agreement to a Section or Exhibit, such reference is to a Section or Exhibit of or to this Agreement unless otherwise indicated. The words "hereof," "herein," "hereto" and "hereunder" and words of similar import, when used in this Agreement, shall refer to this Agreement as a whole and not to any particular provision of this Agreement. The terms defined in the singular has a comparable meaning when used in the plural, and vice versa. References to a Person are also to its successors and permitted assigns. References to an agreement are to such agreement as amended, restated, modified or otherwise supplemented, from time to time. The term "dollars" and "$" means United States dollars. The word "including" means "including without limitation" and the words "include" and "includes" have corresponding meanings.

10.9 Severability. If any term of provision of this Agreement is determined to be illegal, unenforceable or invalid in whole or in part for any reason, such illegal, unenforceable or invalid provisions or Party thereof shall be stricken from this Agreement, and such provision shall not affect the legality, enforceability or validity of the remainder of this Agreement. If any provision or part thereof of this Agreement is stricken in accordance with the provisions of this Section 9.9, then such stricken provision shall be replaced, to extent possible, with a legal, enforceable and valid provision that is as similar in tenor to the stricken provision as is legally possible.

10.10 Notices. All notices required or permitted hereunder shall be in writing and shall be deemed effectively given upon the earlier of actual receipt and (a) upon personal delivery to the Party to be notified, (b) when sent, if sent by electronic mail ("**E-mail**") during normal business hours of the recipient, and if not sent during normal business hours, then on the recipient's next Business Day, (c) five (5) days after having been sent by registered or certified mail, return receipt requested and postage prepaid or (d) one (1) Business Day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification of receipt. All communications shall be sent to the Company and to Purchaser at the address as set forth below or at such other address as Purchaser or the Company may designate by 10 days advance written notice to the Company (in the case of Purchaser) or Purchaser (in the case of the Company).

if to the Company:

Sage Therapeutics, Inc.

215 First St
Cambridge, MA 02142
Attention: Chief Operating Officer (E-mail: [**])

(with copy to) General Counsel (E-mail: [**])
with a copy (which shall not constitute notice) to:
Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, MA 02109
Attention: Stuart M. Falber and Rosemary G. Reilly
E-mail: stuart.falber@wilmerhale.com and rosemary.reilly@wilmerhale.com

if to Purchaser:

Biogen MA Inc.225 Binney Street
Cambridge, MA 02142
Attention: Chief Legal Officer
E-mail: [**]
with a copy (which shall not constitute notice) to:
Ropes & Gray LLP
Prudential Tower
800 Boylston Street,
Boston, MA 02199
Attention: Zachary Blume
E-mail: [**]

10.11 Amendments and Waivers. Except as otherwise expressly set forth in this Agreement, any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of each Party hereto (with respect to an amendment) and the written consent of each Party from whom a waiver is sought (with respect to a waiver). No waiver of any provision or consent to any action shall constitute a waiver of any other provision or consent to any other action, whether or not similar. No waiver or consent shall constitute a continuing waiver or consent or commit a Party to provide a waiver in the future except to the extent specifically set forth in writing.

10.12 Persons Entitled to Benefits of Agreement. This Agreement is intended for the benefit of the Parties hereto and their respective permitted successors and assigns and is not for the benefit of, nor may any provision hereof be enforced by, any other Person.

10.13 Further Assurances. The Company and Purchaser shall use their commercially reasonable efforts, in the most expeditious manner practicable, to satisfy or cause to be satisfied the intent and purposes of this Agreement by executing and delivering such instruments, documents and other writings as may be reasonably necessary or desirable.

[***THE REMAINDER OF THIS PAGE HAS BEEN LEFT INTENTIONALLY BLANK***]

IN WITNESS WHEREOF, the undersigned patties have duly executed this Stock Purchase Agreement effective as of the date first above written.

SAGE THERAPEUTICS, INC.

By: /s/ Jeff Jonas, M.D.

Name: Jeff Jonas, M.D.

Title: Chief Executive Officer

BIOGEN MA INC.

By: /s/ Michel Vounatsos

Name: Michel Vounatsos

Title: Chief Executive Officer

215 First Street, Cambridge, MA 02142
www.sagerx.com

Exhibit 10.40

December 15, 2020
Barry Greene

Dear Barry:

At Sage, our mission is to make life better for patients with central nervous systems diseases by discovering, developing, and delivering important new medicines to the market. Our success results from our people creating products with benefits for patients coupled with our drive to excel in all areas of our business.

On behalf of Sage Therapeutics, (the "Company" or "Sage"), I am pleased to extend an offer of employment to you. You have made an outstanding impression, and we welcome you to join our team and our quest to make a difference for patients. The purpose of this letter is to summarize the terms of your employment with the Company, which will commence on December 15, 2020.

Position

Chief Executive Officer, Reporting to the Board of Directors

This position is a key factor in Sage's continued success, and we are confident that it will be an exciting opportunity for you as well. In considering this role, we ask that you agree to devote your full business time, best efforts, skill, knowledge, attention, and energies to the advancement of the Company's business and interests and to the performance of your duties and responsibilities as an employee of the Company.

Compensation

Your base rate of compensation will be $30,625 bi-monthly (annualized rate of $735,000), less all applicable federal, state, and local taxes and withholdings, to be paid in installments in accordance with the Company's standard payroll practices. Such base salary may be adjusted from time to time in accordance with normal business practices and at the sole discretion of the Company.

In addition, you will be eligible to participate in the Sage Bonus Plan at an annual target of 65% of your base salary, which will be prorated based upon your date of hire. Eligible employees

starting on or before November 1 in the current plan year are eligible to participate in the plan. Across the organization, this discretionary bonus is be based on the Company's assessment and attainment of corporate and individual goals. For the CEO role, the bonus is based 100% on the achievement of corporate goals, as determined by the Compensation Committee and the Board.
Subject to the approval of the Company's Board of Directors (the "Board") or designee and in connection with the commencement of your employment, you will be granted an equity award that includes a time-based stock option grant (the "Time-based Option") and the grant of a stock option with performance-based vesting ("Performance-based Option"). The Time-based Option grant will be to purchase 390,000 shares of the Company's common stock, and the Performance-based Option grant will be to purchase 650,000 shares. The Time-based Option and Performance-based Option will be granted on the first business day of the month following the commencement of your employment. These grants target an ownership of 2%, depending on value at time of appointment there may be an adjustment needed.
The exercise price of both the Time-based Option and the Performance-based Option will be equal to the fair market value of the Company's common stock on the date of grant. The Time-based Option will vest as follows: the Time-based Option will become exercisable as to 25% of the shares on the first anniversary of the Vesting Commencement Date, as defined below; and thereafter, shall become exercisable as to the remaining 75% of the shares in 36 equal monthly installments following the first anniversary of the Vesting Commencement Date until fully vested. The Vesting Commencement Date is your date of hire with the Company.
The Performance-based Option will vest upon the achievement of certain performance goals of the Company. The goals and associated vesting will be determined by the Board and reflected in the grant agreement that will be provided to you.
Vesting of both the Time-based Option and the Performance-based Option assumes continued employment with Sage on the relevant vesting date(s). The Time-based Option and Performance-based Option grants will be subject to the terms and conditions of the Company's 2014 Stock Option and Incentive Plan and its standard form of equity agreements.

Benefits

Because we care about the well-being of our employees, we are pleased to provide you with a comprehensive benefits and wellness package. This is meant to assist you in staying healthy, planning for the future, and developing your career. Our benefits currently include medical, dental, vision, vacation, wellness benefit, flexible-spending accounts, 401k, and much more. Additional information about these benefits is outlined in the enclosed summary.

Eligibility for Employment

For purposes of federal immigration law, you will be required to provide the Company documentary evidence that you are eligible for employment in the United States and evidence of your identity. This requirement applies to U.S. citizens, as well as foreign nationals. Such documentation must be provided to the Company within three (3) business days of your date of hire. Please bring the appropriate documents with you on your first day of employment.

Employee Agreement

As a condition of your employment, you will be required to execute the "Agreement Concerning Loyalty, Confidential Business Information, Inventions and Post-Employment Activity" (the "Employee Agreement").

Employment Relationship

You acknowledge that this letter does not constitute a contract of employment for any particular period of time and does not affect the at-will nature of the employment relationship with the Company. Either you or Sage has the right to terminate your employment at any time, with or without cause, and with or without notice.

Prior Obligations

By signing this letter, you represent that you are not bound by any employment contract, restrictive covenant, or other restriction preventing you from entering into employment with or carrying out your responsibilities for the Company, or which is in any way inconsistent with the terms of this letter. Please note that this offer letter, the Agreement Concerning Loyalty, Confidential Business Information, Inventions and Post-Employment Activity, and the Severance and Change in Control Agreement constitute your formal offer of employment and supersedes any and all prior or contemporaneous agreements, discussions, and understandings, whether written or oral, relating to the subject matter of this letter or your employment with the Company. The resolution of any disputes under this letter will be governed by Massachusetts law.

To accept this offer of employment, please sign this letter in the space provided below and return it to me along with the signed Employee Agreement. This offer is contingent on satisfactory drug test, background check and reference checks.

We are very enthusiastic about having you join our team! We believe you will make a critical contribution to our success and believe that the opportunities presented will allow you significant

215 First Street, Cambridge, MA 02142
www.sagerx.com

personal and professional growth. We hope that you will find Sage a rewarding experience. If you have any questions, please do not hesitate to call anytime.

Very truly yours,

Sage Therapeutics, Inc.

/s/ Erin Lanciani

Erin Lanciani
SVP, People & Organizational Strategy

Agreed to and accepted:

/s/ Barry E. Greene 12/15/20
SIGNATURE DATE

Exhibit 10.41

SEVERANCE AND CHANGE IN CONTROL AGREEMENT

This Severance and Change in Control Agreement (this "Agreement") is made as of the 15th day of December, 2020 by and between Sage Therapeutics, Inc., a Delaware corporation (the "Company"), and Barry E. Greene (the "Executive").

1. **Purpose**. The Company considers it essential to the best interests of its stockholders to promote and preserve the continuous employment of key management personnel. The Board of Directors of the Company (the "Board") recognizes that, as is the case with many corporations, the possibility of a Change in Control (as defined in Section 2 hereof) exists and that such possibility, and the uncertainty and questions that it may raise among management, may result in the departure or distraction of key management personnel to the detriment of the Company and its stockholders. Therefore, the Board has determined that appropriate steps should be taken to reinforce and encourage the continued attention and dedication of members of the Company's key management, including the Executive, to their assigned duties without distraction, including in the face of potentially disturbing circumstances arising from the possibility of a Change in Control. Nothing in this Agreement shall be construed to affect the at-will nature of the employment relationship between the Executive and the Company, and the Executive shall not have any right to be retained in the employ of the Company for any definite term or period of time.

2. **Change in Control**. A "Change in Control" shall be deemed to have occurred upon the occurrence of any one of the following events: (a) the sale of all or substantially all of the assets of the Company on a consolidated basis to an unrelated person or entity, (b) a merger, reorganization or consolidation pursuant to which the holders of the Company's outstanding voting power and outstanding stock immediately prior to such transaction do not own a majority of the outstanding voting power and outstanding stock or other equity interests of the resulting or successor entity (or its ultimate parent, if applicable) immediately upon completion of such transaction, (c) the sale of all of the stock of the Company to an unrelated person, entity or group thereof acting in concert, or (d) any other transaction in which the owners of the Company's outstanding voting power immediately prior to such transaction do not own at least a majority of the outstanding voting power of the Company or any successor entity immediately upon completion of the transaction other than as a result of the acquisition of securities directly from the Company.

3. **Terminating Event**.

A "Terminating Event" shall mean any of the following events in this Section 3 subject to the exceptions noted:

(a) **Termination by the Company**. Termination by the Company of the employment of the Executive with the Company for any reason other than for Cause, death or Disability. For purposes of this Agreement, "Cause" shall mean, as determined

by the Company in good faith and communicated to the Executive in writing specifying with reasonable particularity the facts and circumstances giving rise to such determination:

(i) the indictment or conviction of, or pleading of guilty or no contest by, the Executive of any felony, any crime involving the Company, or any crime involving fraud, moral turpitude or dishonesty;

(ii) any material breach by the Executive of any agreement between the Executive and the Company, including without limitation any agreement relating to confidentiality, assignment of inventions, non-competition and/or non-solicitation, including, without limitation, the Agreement Concerning Loyalty, Confidential Business Information, Inventions and Noncompetition entered into by Executive in connection with Executive's employment (the "Restrictive Covenants Agreement");

(iii) any material violation by the Executive of the Company's written policies, including without limitation any code of conduct, anti-discrimination and/or anti-harassment policy, and/or insider trading policy;

(iv) the Executive's failure to cooperate with an internal investigation, or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation, or the willful inducement of others to fail to cooperate or produce documents or other materials in connection with any such investigation;

(v) any unauthorized use or disclosure of the Company's Proprietary Information. As used in this paragraph, "Proprietary Information" means any information in whatever form, tangible or intangible, related to the business of the Company unless the information is publicly available through lawful means;

(vi) any conduct by the Executive that is reasonably likely to be materially harmful to the business, interests or reputation of the Company; or

(vii) the Executive's willful failure to perform, or material negligence in the performance of, the duties, functions and responsibilities of the Executive's position after a written warning from the Company and a period of at least 30days' opportunity to cure.

A Terminating Event shall not be deemed to have occurred pursuant to this Section 3(a) solely as a result of the Executive becoming an employee of any direct or indirect successor to the business or assets of the Company, rather than continuing as an employee of the Company following a Change in Control. For purposes hereof, the Executive will be considered to have a "Disability" if, as a result of the Executive's incapacity due to physical or mental illness, the Executive shall have been absent from the Executive's duties to the Company on a full-time basis for 180 calendar days in the aggregate in any 12-month period.

(b) **Termination by the Executive for Good Reason**. Termination by the Executive of the Executive's employment with the Company for Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events without the Executive's written consent:

(i) a material diminution in the Executive's responsibilities, authority or duties;

(ii) a material diminution in the Executive's base salary except for across-the-board salary reductions based on the Company's financial performance similarly affecting all or substantially all senior management employees of the Company;

(iii) a material change, defined as 50 miles or more, in the geographic location at which the Executive is required to provides services to the Company (unless such new location is closer to the Executive's residence at the time such change is imposed), not including business travel and short-term assignments; or

(iv) a material breach of this Agreement by the Company.

"Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within 30 days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive provides a Notice of Termination to the Company within 30 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

4. **Change in Control Payment**. In the event a Terminating Event occurs on or within the 12 months immediately after a Change in Control (such 12-month period, the "Change in Control Period"), subject to the Executive signing a separation and release of claims agreement (the form of which will be provided by the Company on or promptly following the Date of Termination (as defined in Section 10 below), and which shall contain, among other provisions, a general release of claims in favor of the Company and related persons and entities, and confidentiality, return of property, non-disparagement, and 12-month post-employment non-competition provisions (the "Separation Agreement")) and such Separation Agreement becoming irrevocable, all within 60 days (or such shorter period as the Company may specify) after the Date of Termination, the following shall occur:

(a) the Company shall pay to the Executive an amount equal to the sum of (i) 12 months of the Executive's annual base salary in effect immediately prior to the Terminating Event (or the Executive's annual base salary in effect immediately prior to the Change in Control, if higher), and (ii) a pro rata portion of the Executive's target bonus for the fiscal year in which the termination of employment occurs, determined by

multiplying the target bonus by a fraction, the numerator of which shall be the number of days during the fiscal year in which the Executive was employed by the Company and the denominator of which shall be 365;

(b) If the Executive is eligible for and elects COBRA coverage, the Company shall pay, on the Executive's behalf or to the Executive, as determined by the Company, on a monthly basis, an amount equal to the share of the premium for the Executive's COBRA coverage that it paid immediately prior to the Date of Termination for the Executive, until the earlier of (x) the date that is 12 months following the Date of Termination, or (y) the date that the Executive becomes eligible to receive group health insurance coverage from another employer (as applicable, the "COBRA Contribution Period"); provided, that the remaining balance of any premium costs during the COBRA Contribution Period, and all premium costs thereafter, shall be paid by the Executive on a monthly basis for as long as, and to the extent that, the Executive remains eligible for COBRA continuation, and further, that if the Executive becomes eligible to receive group health insurance from another employer prior to the date that is 12 months following the Date of Termination, the Executive will provide written notice to the Company at least five (5) business days prior to such eligibility date;

(c) notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, all stock options and other stock-based awards with time-based vesting held by the Executive shall tentatively accelerate and become fully vested, pending the Separation Agreement becoming irrevocable, upon the Date of Termination, subject to compliance, if necessary, with Section 409A; provided, however, that the portion of each such award for which vesting is so accelerated will only become fully vested and exercisable if and when the Separation Agreement becomes irrevocable, and any such tentatively vested portion will be forfeited retroactively to the Executive's Date of Termination if the Executive either notifies the Company that the Executive will not execute or will revoke the Separation Agreement, or the period for providing the Separation Agreement expires without the Executive signing and returning the Separation Agreement, or the Executive revokes the Separation Agreement within the time set forth therein; and

(d) the amounts payable under Section 4(a) shall be paid out in a lump sum commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the amounts shall be paid in the second calendar year on or before the last day of such 60-day period. All other wages earned through the Date of Termination (including, but not limited to, payment for accrued but unused vacation) shall be paid on the Date of Termination.

5. **Severance Outside the Change in Control Period**. In the event a Terminating Event occurs at any time other than during the Change in Control Period, subject to the Executive signing the Separation Agreement and such Separation Agreement becoming irrevocable, all within 60 days (or such shorter period as the Company may specify) after the Date of Termination, the following shall occur:

(a) the Company shall pay to the Executive an amount equal to 12 months of the Executive's annual base salary in effect immediately prior to the Terminating Event;

(b) If the Executive is eligible for and elects COBRA coverage, the Company shall pay, on the Executive's behalf, on a monthly basis, an amount equal to the share of the premium for the Executive's COBRA coverage that it pays for similarly situated active executives, until the earlier of (x) the date that is 12 months following the Date of Termination, or (y) the date that the Executive becomes eligible to receive group health insurance coverage from another employer (as applicable, the "COBRA Contribution Period"); provided, that the remaining balance of any premium costs during the COBRA Contribution Period, and all premium costs thereafter, shall be paid by the Executive on a monthly basis for as long as, and to the extent that, the Executive remains eligible for COBRA continuation, and further, that if the Executive becomes eligible to receive group health insurance from another employer prior to the date that is 12 months following the Date of Termination, the Executive will provide written notice to the Company at least five (5) business days prior to such eligibility date; and

(c) the amounts payable under Section 5(a) shall be paid out in substantially equal installments in accordance with the Company's payroll practice over 12 months commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, such amounts shall begin to be paid in the second calendar year on or before the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2).

6. **Additional Limitation**.

(a) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 280G of the Code and the applicable regulations thereunder (the "Compensatory Payments"), would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code") (or any successor provision), then the Compensatory Payments shall be reduced so that the sum of all of the Compensatory Payments shall be $1.00 less than the amount at which the Executive becomes subject to the excise tax imposed by Section 4999 of the Code (or any successor provision); provided that such reduction shall only occur if it would result in the Executive receiving a higher After Tax Amount (as defined below) than the Executive would receive if the Compensatory Payments were not subject to such reduction. In such event, the Compensatory Payments shall be reduced in the following order, in each case, in reverse chronological order beginning with the Compensatory Payments that are to be paid the furthest in time from consummation of the transaction that is subject to Section 280G of the Code: (i) cash payments not subject to Section 409A of the Code; (ii) cash payments subject to Section 409A of the Code; (iii) equity-based payments and

acceleration; and (iv) non-cash forms of benefits; provided that in the case of all the foregoing Compensatory Payments all amounts or payments that are not subject to calculation under Treas. Reg. §1.280G-1, Q&A-24(b) or (c) shall be reduced before any amounts that are subject to calculation under Treas. Reg. §1.280G-1, Q&A-24(b) or (c).

(b) For purposes of this Section 6, the "After Tax Amount" means the amount of the Compensatory Payments less all federal, state, and local income, excise and employment taxes imposed on the Executive as a result of the Executive's receipt of the Compensatory Payments. For purposes of determining the After Tax Amount, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in each applicable state and locality, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes.

(c) The determination as to whether a reduction in the Compensatory Payments shall be made pursuant to Section 6(a) shall be made by a law or accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

7. **Section 409A**.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's "separation from service" within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement on account of the Executive's separation from service would be considered deferred compensation subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one day after the Executive's separation from service, and (B) the Executive's death.

(b) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder to be exempt from or to comply with Section 409A of the Code.

(c) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as

soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year. Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(d) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-1(h).

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

8. **Term**. This Agreement shall take effect on the date first set forth above and shall terminate upon the earlier of (a) the termination of the Executive's employment with the Company for any reason other than the occurrence of a Terminating Event, or (b) the date all amounts have been paid to the Executive upon a Terminating Event pursuant to Section 4 or Section 5 hereof.

9. **Withholding**. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

10. **Notice and Date of Termination**.

(a) **Notice of Termination**. During the term of this Agreement, any purported termination of the Executive's employment (other than by reason of death) shall be communicated by written Notice of Termination from one party hereto to the other party hereto in accordance with this Section 10. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(b) **Date of Termination**. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by the Executive's death, the date of the Executive's death; (ii) if the Executive's employment is terminated on account of the Executive's Disability or by the Company with or without Cause, the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Executive without Good Reason, 30 days after the date on which a Notice of Termination is given, and (iv) if the Executive's employment is terminated by the Executive with Good Reason, the date on which a Notice of Termination is given after the end of the

Cure Period. Notwithstanding the foregoing, in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not be deemed a termination by the Company for purposes of this Agreement.

11. **No Mitigation**. The Company agrees that, if the Executive's employment by the Company is terminated during the term of this Agreement, the Executive is not required to seek other employment or to attempt in any way to reduce any amounts payable to the Executive by the Company pursuant to Section 4 or Section 5 hereof. Further, the amount of any payment provided for in this Agreement shall not be reduced by any compensation earned by the Executive as the result of employment by another employer.

12. **Scope of Disclosure Restrictions**. Nothing in this Agreement or elsewhere prohibits the Executive from communicating with government agencies about possible violations of federal, state, or local laws or otherwise providing information to government agencies, filing a complaint with government agencies, or participating in government agency investigations or proceedings. The Executive is not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information the Executive obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding the Executive's confidentiality and nondisclosure obligations, the Executive is hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

13. **Consent to Jurisdiction**. The parties hereby consent to the jurisdiction of the Superior Court of the Commonwealth of Massachusetts and the United States District Court for the District of Massachusetts. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

14. **Integration**. This Agreement, as well as the Offer Letter, the Agreement Concerning Loyalty, Confidential Business Information, Inventions and Post-Employment Activity, and any applicable equity or other incentive agreements or plans, constitute the entire agreement between the parties with respect to severance pay, benefits and accelerated vesting in connection with any termination of employment, and, to the extent inconsistent with any prior agreements, supersedes the inconsistent provisions of such prior agreements between the parties concerning such subject matter, including without limitation any provisions of any offer letter or employment agreement relating to severance pay or benefits in connection with the ending of the Executive's employment relationship with the Company. In the interest of clarity, any

agreement relating to confidentiality, non-competition, non-solicitation or assignment of inventions, including but not limited to the Restrictive Covenants Agreement, shall not be affected by this Agreement.

15. **Successor to the Executive**. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributees, devisees and legatees. In the event of the Executive's death after a Terminating Event but prior to the completion by the Company of all payments due to the Executive under this Agreement, the Company shall continue such payments to the Executive's beneficiary designated in writing to the Company prior to the Executive's death (or to the Executive's estate, if the Executive fails to make such designation).

16. **Enforceability**. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any Section of this Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

17. **Waiver**. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

18. **Notices**. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company, or to the Company at its main office, attention of the Board of Directors.

19. **Resignation of all Company Positions**. No later than the Date of Termination, and prior to the provision or payment of any benefits under this Agreement on account of such termination (except as required by law with respect to wages earned through the Date of Termination), the Executive must resign from all positions that the Executive holds with the Company unless otherwise requested by the Company.

20. **Amendment**. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

21. **Effect on Other Plans and Agreements**. An election by the Executive to resign for Good Reason under the provisions of this Agreement shall not be deemed a voluntary termination of employment by the Executive for the purpose of interpreting the provisions of any of the Company's benefit plans, programs or policies. Nothing in this Agreement shall be construed to limit the rights of the Executive under the Company's benefit plans, programs or policies except as otherwise provided in Section 6 hereof, and except that the Executive shall

have no rights to any severance benefits under any Company severance pay plan, offer letter, employment agreement or otherwise. In the event that the Executive is party to an agreement with the Company providing for payments or benefits under such agreement and this Agreement, the terms of this Agreement shall govern and Executive may receive payment under this Agreement only and not both. Further, Section 4 and Section 5 of this Agreement are mutually exclusive and in no event shall Executive be entitled to payments or benefits pursuant to both Section 4 and Section 5 of this Agreement.

22. **Governing Law**. This is a Massachusetts contract and shall be construed under and be governed in all respects by the laws of the Commonwealth of Massachusetts, without giving effect to the conflict of laws principles of such Commonwealth. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the First Circuit.

23. **Successor to Company**. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a material breach of this Agreement.

24. **Counterparts**. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

SAGE THERAPEUTICS, INC.

By: /s/ Erin Lanciani
Name: Erin Lanciani
Title: Senior Vice President, People and Organizational Strategy

/s/ Barry E. Greene
Barry E. Greene

215 First Street, Cambridge, MA 02142
www.sagerx.com

Exhibit 10.42

December 15, 2020

Jeff Jonas, MD

Dear Jeff:

We would like to thank you for your contributions toward achieving our mission to make life better for patients with central nervous systems diseases. We are pleased to confirm the details of your new role, Chief Innovation Officer, effective December 15, 2020.
Your base rate of compensation will be $26,042 bi-monthly (annualized rate of $625,000), less all applicable federal, state, and local taxes and withholdings, to be paid in installments in accordance with the Company's standard payroll practices. Such base salary may be adjusted from time to time in accordance with normal business practices and at the sole discretion of the Company.
In addition, you will continue to be eligible to participate in the Sage Bonus Plan at an annual target of 45% of your base rate of compensation. This discretionary bonus will be based on the Company's assessment and attainment of corporate and individual goals. For calendar year 2020, you will be eligible to receive your bonus at your current target of 60% with payout determined by the Compensation Committee and Board based on corporate goal achievement.

You will also continue to participate in all Sage benefits plans as well as be eligible for our annual long-term incentive program. Your existing Change in Control/Severance agreement will remain in place and in effect as well with the understanding that any future implementation of its provisions will be based on the parameters of your new role.

Very truly yours,

Sage Therapeutics, Inc.

/s/ Erin Lanciani
Erin Lanciani
SVP, People & Organizational Strategy

Agreed to and accepted:

/s/ Jeffrey Jonas, M.D. December 15, 2020
Jeffrey Jonas, M.D. DATE

Exhibit 21.1

SUBSIDIARIES

	Subsidiary	Jurisdiction of Incorporation
1	Sage Securities Corporation	Massachusetts
2	Sage (Bermuda) Ltd.	Bermuda
3	Sage Therapeutics Limited	England and Wales
4	Sage Therapeutics GmbH	Switzerland
5	Sage Therapeutics GmbH	Germany

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (File No. 333-228879) and on Forms S-8 (File Nos. 333-197498, 333-204549, 333-209831, 333-216202, 333-223146, 333-228246, 333-229732 and 333-236680) of Sage Therapeutics, Inc. of our report dated February 24, 2021 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
February 24, 2021

Exhibit 31.1

CERTIFICATIONS UNDER SECTION 302

I, Barry E. Greene, certify that:

1. I have reviewed this annual report on Form 10-K of Sage Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal controls over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2021

/s/ Barry E. Greene

Name: Barry E. Greene
Title: Chief Executive Officer, President and Director
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS UNDER SECTION 302

I, Kimi Iguchi, certify that:

1. I have reviewed this annual report on Form 10-K of Sage Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal controls over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2021

/s/ Kimi Iguchi

Name: Kimi Iguchi
Title: Chief Financial Officer (Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATIONS PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with this Annual Report on Form 10-K of Sage Therapeutics, Inc. (the "Company") for the fiscal year ended December 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers hereby certifies, pursuant to 18 U.S.C. (section) 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of his or her knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Barry E. Greene

Name: Barry E. Greene
Title: Chief Executive Officer, President and Director (Principal Executive Officer)
Date: February 24, 2021

/s/ Kimi Iguchi

Name: Kimi Iguchi
Title: Chief Financial Officer (Principal Financial and Accounting Officer)
Date: February 24, 2021