Filed Pursuant to Rule 424(b)(5)
Registration No. 333-208870

The information in this preliminary prospectus supplement is not complete and may be changed. A registration statement relating to these securities has been filed with the Securities and Exchange Commission and is effective. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and they are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion
Preliminary prospectus supplement dated February 7, 2018

Prospectus supplement
(To prospectus dated January 5, 2016)

$575,000,000

Common stock

We are selling up to $575,000,000 of our common stock in this offering.

Our common stock is traded on The Nasdaq Global Market under the symbol “SAGE.” On February 6, 2018, the last reported sale price of our common stock was $179.90 per share, as reported on The Nasdaq Global Market.

Investing in our common stock involves risks. See “Prospectus Supplement Summary—Risks Related to Our Business” beginning on page S-14 of this prospectus supplement and “Risk Factors” beginning on page S-20 of this prospectus supplement and in our Annual Report on Form 10-K for the year ended December 31, 2016 and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, which are incorporated herein by reference.

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

	Per share	Total
Public offering price	$	$
Underwriting discounts and commissions(1)	$	$
Proceeds, before expenses, to Sage Therapeutics, Inc.	$	$

(1) We have agreed to reimburse the underwriters for certain FINRA-related expenses. See “Underwriting.”

We have granted the underwriters an option for a period of 30 days from the date of this prospectus supplement to purchase up to approximately $86,250,000 of additional shares of our common stock at the public offering price, less the underwriting discount.

The underwriters expect to deliver the shares of common stock against payment to the investors on or about , 2018.

J.P. Morgan **Goldman Sachs & Co. LLC** **Morgan Stanley**

The date of this prospectus supplement is , 2018.

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Prospectus supplement

Prospectus

About this prospectus supplement

This document is part of the registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process and consists of two parts. The first part is this prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference, gives more general information, some of which may not apply to this offering. Generally, when we refer to the “prospectus,” we are referring to both parts combined. This prospectus supplement may add to, update or change information in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement or the accompanying prospectus.

If information in this prospectus supplement is inconsistent with the accompanying prospectus or with any document incorporated by reference that was filed with the SEC before the date of this prospectus supplement, you should rely on this prospectus supplement. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into each include important information about us, the securities being offered and other information you should know before investing in our securities. You should also read and consider information in the documents we have referred you to in the sections of this prospectus supplement entitled “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference” and in the sections of the accompanying prospectus entitled “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference.”

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

We take no responsibility for, and can provide no assurances as to the reliability of, any information that is in addition to or different from that contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. We are not offering to sell these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained or incorporated by reference in this prospectus supplement or the accompanying prospectus is accurate as of any date other than as of the date of this prospectus supplement or the accompanying prospectus, as the case may be, or in the case of the documents incorporated by reference, the date of such documents, regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or any sale of our securities. Our business, financial condition, liquidity, results of operations and prospects may have changed since those dates.

All references in this prospectus supplement or the accompanying prospectus to the “Company,” “we,” “us,” or “our” mean Sage Therapeutics, Inc. and our subsidiaries, unless we state otherwise or the context otherwise requires. We own various U.S. federal trademark applications and unregistered trademarks, including our corporate logo. This prospectus supplement and the information incorporated herein by reference contain references to trademarks, service marks and trade names owned by us or other companies. Solely for convenience, trademarks, service marks and trade names referred to in this prospectus supplement and the information incorporated herein, including logos, artwork, and other visual displays, may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks, service marks and trade names.

We do not intend our use or display of other companies' trade names, service marks or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement or any related free writing prospectus are the property of their respective owners.

No action is being taken in any jurisdiction outside the United States to permit a public offering of the securities or possession or distribution of this prospectus supplement or the accompanying prospectus in that jurisdiction. Persons who come into possession of this prospectus supplement or the accompanying prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus supplement or the accompanying prospectus applicable to that jurisdiction.

Where you can find additional information; incorporation by reference

We have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933, as amended, or the Securities Act, with respect to the common stock offered by this prospectus supplement. This prospectus supplement, filed as part of the registration statement, does not contain all the information set forth in the registration statement and its exhibits and schedules, portions of which have been omitted as permitted by the rules and regulations of the SEC. For further information about us, we refer you to the registration statement and to its exhibits and schedules.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any materials we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information about the Public Reference Room. The SEC also maintains a website at www.sec.gov that contains periodic and current reports, proxy and information statements, and other information regarding registrants that are filed electronically with the SEC.

These documents are also available, free of charge, through the Investors & Media section of our website, which is located at www.sagerx.com. Information contained on our website is not incorporated by reference into this prospectus supplement or the accompanying prospectus and you should not consider information on our website to be part of this prospectus supplement or the accompanying prospectus.

The SEC allows us to incorporate by reference the information and reports we file with it, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is an important part of this prospectus supplement and accompanying prospectus, and information that we file after the date hereof with the SEC will automatically update and supersede the information already incorporated by reference. We are incorporating by reference the documents listed below, which we have already filed with the SEC, and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities and Exchange Act of 1934, as amended, or the Exchange Act, except as to any portion of any future report or document that is not deemed filed under such provisions, after the date of this prospectus supplement and prior to the termination of this offering:

- Annual Report on Form 10-K for the year ended December 31, 2016, as filed with the SEC on February 24, 2017;
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2016 from our definitive proxy statement on Schedule 14A (other than information furnished rather than filed), which was filed with the SEC on April 28, 2017;
- Quarterly Reports on Form 10-Q filed with the SEC for the quarters ended March 31, 2017, June 30, 2017 and September 30, 2017, as filed with the SEC on May 10, 2017, August 3, 2017 and November 2, 2017, respectively;
- Current Reports on Form 8-K filed with the SEC on March 9, 2017, June 8, 2017, September 12, 2017, November 8, 2017, November 9, 2017, November 15, 2017, November 17, 2017, December 7, 2017, January 8, 2018, January 31, 2018 and February 7, 2018 (in each case, except for information contained therein which is furnished rather than filed); and
- The description of our common stock contained in our registration statement on Form 8-A, which was filed with the SEC on July 15, 2014, including any amendment or report filed for the purpose of updating such description.

Upon request, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered a copy of the documents incorporated by reference into

this prospectus. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus, at no cost by writing or telephoning us at the following:

Sage Therapeutics, Inc., 215 First Street, Cambridge, Massachusetts, 02142, Attention: Secretary, (617) 299-8380.

You may also access these documents, free of charge, on the SEC's website at *www.sec.gov* or on our website at *www.sagerx.com*. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information on, or that can be accessed from, our website as part of this prospectus supplement or the accompanying prospectus.

Special note regarding forward-looking statements

This prospectus supplement, the accompanying prospectus and the information incorporated by reference herein and therein contain statements that are not historical facts and are considered forward-looking within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. These forward-looking statements contain projections about the advancement and potential of our product candidates, our future results of operations or our financial position and other plans and expectations with respect to our activities. In some cases you can identify these statements by forward-looking words such as “anticipate,” “believe,” “could,” “continue,” “estimate,” “expect,” “intend,” “may,” “should,” “will,” “would,” “plan,” “projected” or the negative of such words or other similar words or phrases. We believe that it is important to communicate our future expectations to our investors. However, there may be events in the future that we are not able to accurately predict or control, and that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements.

Investors are cautioned not to unduly rely on forward-looking statements because these statements are based on the beliefs and assumptions of our management based on information currently available to management and they relate to future events or our future financial performance, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- our plans and expectations with respect to development and potential commercialization of our product candidates in the central nervous system disorders we discuss in this prospectus supplement, and potentially in other indications;
- our ability, within the expected timeframes, to file a new drug application with the U.S. Food and Drug Administration and a possible marketing authorization application with the European Medicines Agency seeking approval to market our proprietary intravenous, or IV, formulation of brexanolone as a treatment for postpartum depression, and our expectations as to the sufficiency of the data generated from our clinical trials and non-clinical studies to support regulatory approval;
- our expectations as to the timing of a potential launch of brexanolone IV in the United States to treat PPD, and our views as to our future readiness for such a launch;
- 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 expectations with respect to the anticipated regulatory approval requirements and review pathway for our product candidates and the potential to obtain regulatory approval and to commercialize any product, if approved;
- our estimates regarding expenses; use of cash; timing of future cash needs; and capital requirements;
- our potential to achieve future revenues;
- our expectations as to the market, pricing and reimbursement environment for our potential products, and the potential for future revenues;
- our expectations with respect to the availability of supplies of our product candidates, and the expected performance of our third-party manufacturers;

- our expectations with respect to the performance of our contract research organizations and other third parties whose activities are important to our development and future commercialization efforts;
- 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 in indications of interest to us; the potential for our product candidates in those indications, if approved; the size of the potential markets for our product candidates; and our ability to serve those markets;
- the anticipated rate and degree of market acceptance, and expectations regarding pricing and the potential scope, level and availability of reimbursement, of our product candidates in any indication and in any country if approved;
- our plans for expanding our activities, including outside the United States, and the potential for future collaborations and other types of contractual relationships, if appropriate, for accomplishing our strategic objectives;
- the level of costs we may incur in connection with our activities, the possible timing and sources of future financings, and our ability to obtain additional financing when needed to fund future operations;
- the potential for success of competing products that are or become available for the indications that we are pursuing or may in the future pursue;
- the potential risk of loss of key scientific or management personnel; and
- other risks and uncertainties, including those listed under the “Risk Factors” section.

These forward-looking statements are neither promises nor guarantees of future performance, and are subject to a variety of risks and uncertainties, many of which are beyond our control, which could cause actual results to differ materially from those indicated by these forward-looking statements, including, without limitation: the risk that regulatory authorities may, despite prior advice, decide that the clinical and nonclinical data from our brexanolone development program in postpartum depression are not sufficient to support a filing for regulatory approval or do not support the grant of regulatory approval, and may require additional trials, analyses or data; the risk that issues may arise during inspections by regulatory authorities of our facilities, data and systems or those of our contract research organization, contract manufacturer or clinical sites that could delay or prevent us from gaining approval of brexanolone; the possibility that we may experience slower than expected clinical site initiation or slower than expected identification and enrollment of evaluable patients in our ongoing or future clinical trials; the potential for delays or problems in analyzing data or the need for additional analysis, data or patients; the potential that future nonclinical and clinical results may not be positive and may not support further development of our product candidates; the potential for unexpected adverse events or other safety or tolerability issues arising in the conduct of our clinical trials or nonclinical studies to impact our ability to continue clinical trials or further development of the applicable product candidate or to gain regulatory approval; the risk that our estimates of the prevalence of the diseases for which we are developing our product candidates may be significantly lower than we expect; the risk that internal and external costs required for our activities, and to build our organization, and the resulting use of cash, may be higher than we expect, or we may conduct additional clinical trials or pre-clinical studies, or engage in new activities, requiring additional expenditures and using cash more quickly than anticipated; the risk that even if brexanolone or any of our other product candidates is approved, we may not be able to obtain pricing, reimbursement or market acceptance at the levels we expect; and the risk that we may encounter other unexpected hurdles or issues in the development, manufacture and potential future commercialization of our product candidates that may impact our timing, progress or results, as well as those risks more fully

discussed in the “Risk Factors” section and under “—Risks Related to Our Business” in this prospectus supplement, the section of the accompanying prospectus entitled “Risk Factors” and the risk factors and cautionary statements described in other documents that we file from time to time with the SEC, specifically under “Item 1A: Risk Factors” and elsewhere in our most recent Annual Report on Form 10-K for the year ended December 31, 2016, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K.

Given these uncertainties, readers should not place undue reliance on our forward-looking statements. These forward-looking statements speak only as of the date on which the statements were made and are not guarantees of future performance. Except as may be required by applicable law, we do not undertake or intend to update any forward-looking statements after the date of this prospectus supplement or the respective dates of documents incorporated by reference herein or therein that include forward-looking statements.

Prospectus supplement summary

This summary highlights selected information contained elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary may not contain all the information that you should consider before investing in our securities. You should read this entire prospectus supplement and the accompanying prospectus carefully, especially the risks of investing in our common stock discussed under "Risk Factors" beginning on page S-20 of this prospectus supplement, along with our consolidated financial statements and notes to those consolidated financial statements and the other information incorporated by reference in this prospectus supplement and the accompanying prospectus, before making an investment decision. This prospectus supplement may add to, update or change information in the accompanying prospectus.

Overview

We are a clinical-stage biopharmaceutical company committed to developing and commercializing novel medicines to treat life-altering central nervous system, or CNS, disorders, where there are no approved therapies or existing therapies are inadequate. We have a portfolio of product candidates with a current focus on modulating 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 via activation of $GABA_A$ 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 targeting CNS indications where patient populations are easily identified, clinical endpoints are well-defined, and development pathways are feasible.

Our lead product candidate, brexanolone (USAN) for intravenous, or IV, use, is a proprietary formulation of allopregnanolone, a naturally occurring neuroactive steroid that acts as a positive allosteric modulator of $GABA_A$ receptors, including both synaptic and extrasynaptic populations. We are currently developing brexanolone as a potential treatment for postpartum depression, or PPD. In November 2017, we announced positive top-line data from our Hummingbird program: two placebo-controlled Phase 3 clinical trials of brexanolone IV, one evaluating patients with severe PPD and one evaluating patients with moderate PPD. Both trials achieved their primary endpoints. We believe these results, together with the results of prior clinical studies of brexanolone IV in PPD and nonclinical studies, will be sufficient to support the submission of a New Drug Application, or NDA, to the U.S. Food and Drug Administration, or FDA, seeking approval for brexanolone in PPD in the United States. We expect to submit the NDA in the first half of 2018. We have also received PRIority MEdicines, or PRIME, designation from the European Medicines Agency, or EMA, for brexanolone in the treatment of PPD in the EU. We anticipate that planned discussions with the EMA will better inform timing of our planned marketing authorization application, or MAA, submission, any additional work required, the potential for conditional or full marketing approval and potential post-marketing clinical development obligations if our application is approved.

PPD is a distinct and readily identified major depressive disorder that is a common biological complication of childbirth, affecting a subset of women typically commencing in the third trimester of pregnancy or in the months after giving birth. PPD often leads to devastating consequences for a woman and for her family, which may include:

- significant functional impairment;
- depressed mood and/or loss of interest in the newborn, and;
- associated symptoms of depression such as loss of appetite, difficulty sleeping, motor challenges, lack of concentration, loss of energy and poor self-esteem.

Suicide is the leading cause of maternal death following childbirth. It is estimated that PPD affects approximately 10 to 20 percent of women giving birth globally. In the United States, estimates of new mothers identified with PPD each year vary state-to-state from 8 to 20 percent, with an overall average of 11.5 percent. Based on these data, we estimate that greater than 400,000 or more women in the United States each year may experience PPD. There are no pharmacological therapies specifically approved for PPD.

The Hummingbird Phase 3 program included two Phase 3, multicenter, randomized, double-blind, parallel-group, placebo-controlled trials designed to evaluate the safety and effectiveness of brexanolone in women with moderate and severe PPD. Entry criteria for participants included symptoms of PPD that began no earlier than the third trimester and no later than the first four weeks following delivery in women who were no more than six months post-partum at the time of screening. In November 2017, we announced that in both trials at all doses, brexanolone achieved the primary endpoint, a statistically significant mean reduction from baseline in the Hamilton Rating Scale for Depression, or HAM-D, total score at 60 hours compared to placebo (Study 202B: p=0.0252 for 90 µg/kg/h dose and p=0.0013 for 60 µg/kg/h dose; Study 202C: p=0.0160 for 90 µg/kg/h dose). Patients treated with brexanolone demonstrated mean reductions from baseline in HAM-D total scores of 14 to 20 points at 60 hours maintained to 30 days in both trials, demonstrating duration of therapeutic effect. Brexanolone was generally well tolerated and showed a similar safety profile as seen in earlier studies.

In Study 202B, 138 women with severe PPD as measured by a HAM-D total score of 26 or above prior to randomization were dosed in one of three treatment groups: brexanolone 90 µg/kg/hour, brexanolone 60 µg/kg/hour, or placebo, on a 1:1:1 basis. Brexanolone 90 µg/kg/hour treatment was associated with a statistically significant mean reduction in HAM-D total score of 17.7 points from baseline compared with a 14.0 point mean reduction in HAM-D total score associated with placebo (p=0.0252). Brexanolone 60 µg/kg/hour treatment was associated with a statistically significant mean reduction in HAM-D total score of 19.9 points from baseline compared with a 14.0 point mean reduction in HAM-D total score associated with placebo (p=0.0013). Reduction in HAM-D total score of brexanolone versus placebo were first observed at 48 hours (p=0.011 for 60 µg/kg/h dose and p=0.0511 for 90 µg/kg/h dose), and the effect at 60 hours was maintained at the 30-day follow-up with statistical significance for both brexanolone dose groups at 30 days. Improvement in the Clinical Global Impression—Improvement scale (CGI-I) at 60 hours was consistent with the primary endpoint (p=0.0095 for 90 µg/kg/h dose and p=0.0131 for 60 µg/kg/h dose).

In Study 202C, 104 patients with moderate PPD were dosed in one of two treatment groups (brexanolone 90 µg/kg/hour or placebo) on a 1:1 basis. Brexanolone treatment was associated with a statistically significant mean reduction in HAM-D total score of 14.2 points from baseline at 60 hours (p=0.016) compared with a 12.0 point mean reduction in HAM-D total score associated with placebo. Statistical significance was first observed at 48 hours and remained through Day 7, but was not observed at Day 30. However, the effect observed at 60 hours was maintained through the 30-day follow-up. Improvement in the Clinical Global Impression—Improvement scale (CGI-I) at 60 hours was consistent with the primary endpoint (p=0.0005).

Brexanolone was generally well tolerated in both trials with similar rates of adverse events across all treatment groups. One patient experienced two serious adverse events in each Phase 3 PPD trial; neither required hospitalization and both serious adverse events in one subject in Study 202B were deemed by the investigator not to be study-drug related.

We have received Breakthrough Therapy designation from the FDA for brexanolone as a potential treatment for PPD. Based on input we received from the FDA during a Breakthrough Therapy meeting,

we believe the results of the Phase 3 clinical program, together with the results of prior clinical trials and nonclinical studies of brexanolone in PPD, will be sufficient to support the submission of an NDA to the FDA seeking approval for brexanolone in PPD in the United States. We expect to submit the NDA in the first half of 2018. We anticipate that planned discussions with the EMA will better inform timing of our planned MAA submission, any additional work required, the potential for conditional or full marketing approval and potential post-marketing clinical development obligations if our application is approved. If approved as a treatment for PPD, brexanolone would be administered intravenously for 60 hours.

We are in the process of preparing for a potential commercial launch of brexanolone IV in PPD in the United States in the first half of 2019. Our ability to launch brexanolone IV in the United States is dependent on the successful filing of an NDA with the FDA, and obtaining FDA approval, in each case on our expected timelines. As part of our ongoing launch readiness efforts in the United States, we are continuing to build the teams, infrastructure, systems, processes, policies, relationships and materials necessary for launch of brexanolone IV in the United States in PPD, including in sales; marketing; market access; patient support; medical affairs; distribution; quality; compliance; and other key functional areas. If the NDA for brexanolone IV is approved by the FDA, we anticipate deploying a field sales force team of approximately 50 key account managers calling on hospitals and approximately 200 specialty representatives calling on healthcare professionals who treat in an outpatient setting. As we continue to build our market access capabilities, we are engaging in permitted discussions with payors as we plan for a potential launch. We are also focused on enabling appropriate sites of care for administering brexanolone IV, including the potential for home infusion. If approved as a treatment for PPD, brexanolone IV would be administered intravenously for 60 hours. In addition to our efforts in the United States, we are refining our strategy and market assessments with respect to a potential launch in the E.U. We also plan to continue to evaluate market opportunities for brexanolone IV in PPD in other global markets.

In the third quarter of 2017, we announced results of a Phase 3 clinical trial of brexanolone in super-refractory status epilepticus, or SRSE. The trial did not meet its primary endpoint of comparing success in weaning of third-line agents and resolution of status epilepticus in SRSE patients treated with brexanolone versus placebo when added to standard-of-care. We are continuing to analyze the Phase 3 data, but do not currently plan to pursue brexanolone as a treatment for SRSE.

Our most advanced next-generation product candidate is SAGE-217, a novel neuroactive steroid that, like brexanolone, is a positive allosteric modulator of $GABA_A$ receptors, targeting both synaptic and extrasynaptic $GABA_A$ receptors. We are currently developing SAGE-217 as a potential treatment for several mood disorders: major depressive disorder, or MDD, bipolar depression, and PPD, and also in Parkinson's disease and insomnia.

In December 2017, we announced positive top-line data from a double-blind, placebo-controlled Phase 2 clinical trial of SAGE-217 in patients with moderate to severe MDD. In the trial, treatment for 14 days with SAGE-217 was associated with a statistically significant mean reduction from baseline in the HAM-D 17-Item total score at Day 15 (the time of the primary endpoint) of 17.6 points for the SAGE-217 group, compared to 10.7 for the placebo group ($p<0.0001$). Statistically significant mean improvements in the HAM-D score compared to placebo were observed by the morning following the first dose through Week 4, and the effects of SAGE-217 remained numerically greater than placebo through the end of follow-up at Week 6, but the results at week 6 were not statistically significant. At Day 15, 64 percent of patients who received SAGE-217 achieved remission, defined as a score of 7 or less on the HAM-D score, compared with 23 percent of patients who received placebo ($p=0.0005$). SAGE-217 was generally well-tolerated in the trial with no serious or severe adverse events. The overall number of reports of adverse events were similar between drug (53%) and placebo (46%). A low rate of discontinuations due to adverse events was reported. Based on these results, we expect to

initiate additional clinical trials of SAGE-217 in MDD and to commence initial clinical development of SAGE-217 in bipolar depression in 2018. In February 2018, we received Breakthrough Therapy designation from the FDA for SAGE-217 as a potential treatment for MDD.

In January 2018, we reported positive results from a Phase 1/2, double-blind, placebo-controlled study of SAGE-217 in the treatment of 45 healthy adult volunteers using a 5-hour phase advance model of insomnia using polysomnography. SAGE-217 was administered as a single dose at either 30 or 45 mg and significantly improved sleep efficiency, or SE, to a median of 85% for 30mg ($p<0.0001$) and 88% for 45mg ($p<0.0001$) compared with a median SE of 73% for placebo. SAGE-217 also demonstrated statistically significant improvements in total sleep time and maintenance as measured by time spent awake after sleep onset. SAGE-217 was generally well-tolerated and all adverse events were mild, with no serious adverse events or adverse events leading to discontinuation. We believe the results of this Phase 1/2 trial will provide guidance on the potential clinical development of SAGE-217 in sleep disorders, which we expect to commence in 2018.

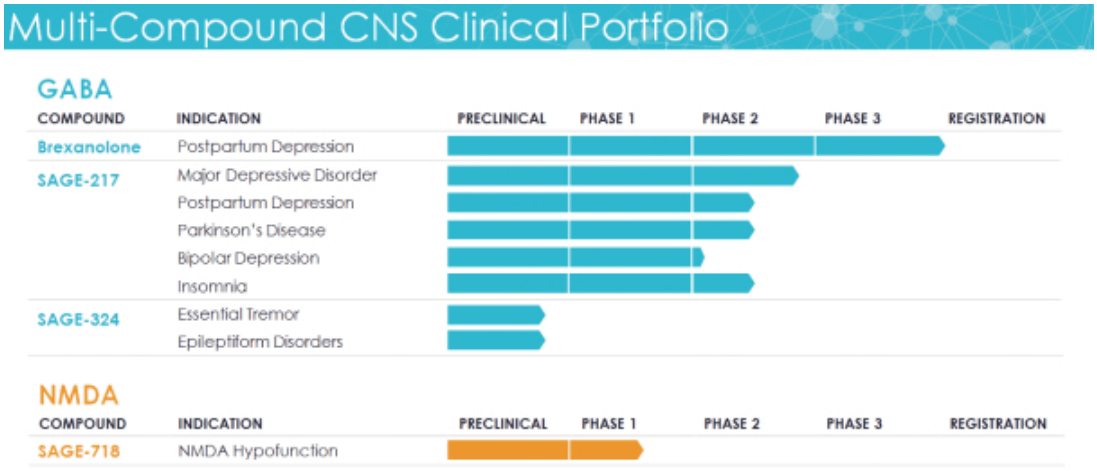
In November 2017, we reported results from an open-label exploratory Phase 2 clinical trial evaluating SAGE-217 as an adjunctive treatment to anti-Parkinsonian agents in 14 patients with tremor-predominant Parkinson's disease. The clinical trial of SAGE-217 met its primary efficacy endpoint of improving tremor symptoms, as assessed by the Movement Disorder Society Unified Parkinson's Disease Rating Scale, or MDS-UPDRS,—Part II/III tremor score, by a mean change of 7.7 points (40.0%) by Day 8 from a mean baseline of 19.1 points. Additional secondary efficacy endpoints were consistent with the primary efficacy endpoint. SAGE-217 improved overall Parkinson's disease motor symptoms, as assessed by the MDS-UPDRS Part III motor score, by a mean change of 18.6 points (36.3%) by Day 8 from a mean baseline score of 52.4 points. SAGE-217 also improved symptoms of sleep dysfunction in five patients with clear sleep dysfunction at baseline, as assessed by the Parkinson's Disease Sleep Scale (PDSS-2) score, by a mean change of 12.2 points (41.2%) by Day 8 from a mean baseline score of 29.8 points. The most common adverse events observed in the trial were dizziness, sedation and somnolence, each occurring in two patients. We believe the results of this open-label Phase 2 trial will provide guidance on methodology, dosing, and design for a planned placebo-controlled Phase 2 clinical trial of SAGE-217 in Parkinson's disease patients with residual tremor, which we expect to commence in 2018.

In late 2017, we completed Part C of an exploratory open-label Phase 2 clinical trial of SAGE-217 in 18 patients with essential tremor studying higher doses than doses studied in Part A and B of the open-label trial and evaluating extended dosing. In Part C, SAGE-217 improved tremor symptoms, as assessed by the Kinesia Upper Limb Combined Score, by 16% on Day 15 following two weeks of dosing, although the improvement was not statistically significant. Administration of SAGE-217 in Part C was generally well-tolerated. There were no serious adverse events reported in Part C. Reductions in kinetic tremor measures of up to 21% at 40mg observed in Part C suggest twice-daily dosing may be preferable for this indication. In November 2017, we announced results of Part A of the Phase 2 trial, based on data generated prior to discontinuation of enrollment. Part A was an open-label trial with morning dosing of SAGE-217 for seven days, enrolling 16 patients diagnosed with essential tremor, defined as visible and persistent bilateral postural tremor and kinetic tremor, involving hands and forearms, with a duration greater than five years prior to screening. In Part A, SAGE-217 improved tremor symptoms, as assessed by the TETRAS upper limb combined kinetic score, by at least 30% on Day 7 in 8/12 patients (67%) who received SAGE-217 oral capsule in the trial for the entire seven days, which was the pre-established success criteria for moving to the next part of the trial. Administration of SAGE-217 in the morning was generally well-tolerated. The most common adverse events were somnolence, dizziness, and sedation. There were no serious adverse events reported in the 14 patients receiving SAGE-217 oral capsule. There was one serious adverse event reported as

confusion in one of the two patients who received SAGE-217 oral solution prior to transition to the capsule form of administration. In conjunction with changes in the Phase 2 trial design and commencement of Part C, Part B of the trial was discontinued, and there was an insufficient number of patients enrolled prior to enrollment to generate meaningful data. Based on the results we have seen with respect to SAGE-217 in this indication, we have decided to transition development of our $GABA_A$ program for essential tremor from SAGE-217 to SAGE-324, which we believe has a profile suited for twice-daily dosing.

We are also currently conducting a blinded, placebo-controlled Phase 2 clinical trial of SAGE-217 in PPD. In February 2018, we decided to increase the number of patients in the trial even further than the prior increase at the end of 2017 from approximately 66 patients to approximately 140 patients in order to increase the power of the trial from 80% to 90%. As a result of that change we now expect to report top-line results from this trial in the fourth quarter of 2018.

The following table summarizes the status of our development programs as of the date of this prospectus supplement.



We have a portfolio of other novel compounds that target $GABA_A$ receptors, including SAGE-324 and SAGE-689, which are at earlier stages of development with a focus on both acute and chronic CNS disorders. SAGE-324 is currently in IND-enabling studies, and is intended to be developed with a focus on epileptiform disorders and essential tremor. SAGE-689 is at the preclinical stage of development as we evaluate possible alternative formulations. We also have earlier stage GABA compounds and programs such as SAGE-105 and our ST-320 and ST-500 programs.

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. Our initial areas of focus for development of SAGE-718 are expected to be indications involving NMDA receptor hypofunction. Examples of these potential areas for future evaluation include certain types, aspects or subpopulations of a number of diseases such as depression, Alzheimer's disease, attention deficit hyperactivity disorder, schizophrenia, Huntington's disease, and neuropathic pain. We commenced the Phase 1 clinical program for SAGE-718 in the second quarter of 2017. In November 2017, we reported results from a Phase 1 single ascending dose trial of SAGE-718 in healthy volunteers. The primary objectives of the trial were to assess the

safety, tolerability, and pharmacokinetics of SAGE-718. In the single ascending dose trial, SAGE-718 was administered as an oral solution in four double-blind placebo-controlled cohorts (randomized 6:2) enrolling a total of 32 healthy volunteers. SAGE-718 was well-tolerated in the trial with no serious adverse events reported. The pharmacokinetics of SAGE-718 observed in the trial were highly predictable with low variability. Based on these results, we plan to initiate a Phase 1 multiple ascending dose trial. We are also investigating the effects of SAGE-718 on pharmacodynamic biomarkers. We have also initiated IND-enabling studies of SAGE-904, another positive allosteric modulator of the NMDA receptor.

We expect to continue our focus on allosteric modulation of the $GABA_A$ and NMDA receptor systems in the brain. The $GABA_A$ and NMDA receptor systems are broadly accepted as impacting many psychiatric and neurological disorders, spanning disorders of mood, seizure, cognition, anxiety, sleep, pain, epilepsy and movement disorders, among others. We believe that we will have the opportunity to develop molecules from our internal portfolio with the goal of addressing a number of these disorders in the future. Our ability to identify and develop such novel CNS 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 steroids. 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, and to select for development product candidates that have the potential for better selectivity, increased tolerability and fewer off-target side effects than either current CNS therapies or previous therapies which have failed in development.

We have not generated any revenue to date. We have incurred net losses in each year since our inception, and we have an accumulated deficit of $521.0 million as of September 30, 2017. Our net losses were $200.7 million for the nine months ended September 30, 2017 and $159.0 million for the year ended December 31, 2016. These losses have resulted principally from costs incurred in connection with research and development activities and general and administrative costs associated with our operations. We expect to incur significant expenses and increasing operating losses for the foreseeable future.

We issued 4,058,822 shares of common stock in an underwritten public offering, completed on November 17, 2017, or the November 2017 Offering. Including such issuance, we had 42,002,934 shares of common stock outstanding as of December 31, 2017.

Our strategy

Our goal is to become a leading biopharmaceutical company focused on development and commercialization of novel proprietary therapies for the treatment of life-altering CNS disorders. Key elements of our strategy are to:

- Seek regulatory approval of our proprietary IV formulation of brexanolone in PPD in the United States and the E.U., and potentially in other markets where it may make business and strategic sense for us to proceed;
- Build the commercial capability to bring our IV formulation of brexanolone to the market for the treatment of PPD, and commercialize the product in the United States, if and when approved, and to be prepared to market our other central nervous system product candidates, if and when approved for their target indications;
- Advance development of SAGE-217, in parallel with brexanolone in one or more of MDD, bipolar depression, PPD, Parkinson’s disease, and insomnia;

- Advance SAGE-324 in IND-enabling studies with a potential future development focus on epileptiform disorders and essential tremor;
- Advance SAGE-718, our novel allosteric modulator for NMDA, through completion of ongoing Phase 1 clinical trials, and, if successful, move into later-stage clinical trials;
- Continue our research and development efforts to evaluate the potential for our existing product candidates in the treatment of additional indications, and the identification of new drug candidates in the treatment of CNS disorders;
- Enhance the probability of success in treating CNS disorders by developing unique assets with differentiated features, and focus our internal development activities on CNS indications where we can make well-informed, rapid go/no-go decisions; and
- Grow our pipeline more broadly utilizing the strengths of our proprietary chemistry platform and scientific know-how, to lessen our long-term reliance on a single franchise and to facilitate long-term growth.

Company information

We were incorporated in Delaware in April 2010. Our mailing address and executive offices are located at 215 First Street, Cambridge, Massachusetts, 02142, and our telephone number is (617) 299-8380. We maintain an Internet website at the following address: www.sagerx.com. The information on, or that can be accessed through, our website does not constitute part of this prospectus supplement or the accompanying prospectus, and you should not rely on any such information in making the decision whether to purchase our common stock. Our common stock trades on The Nasdaq Global Market under the symbol “SAGE”.

Risks related to our business

We are a clinical-stage biotechnology company, and our business and ability to execute our business strategy are subject to a number of risks of which you should be aware before you decide to buy our common stock. In particular, you should consider the following risks, which are discussed more fully in the section entitled “Risk Factors” in this prospectus supplement and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016 and in our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2017, which are incorporated herein by reference:

- We depend heavily on the success of our current product candidates, of which brexanolone has completed Phase 3 clinical development for PPD; SAGE 217 has only completed one placebo-controlled trial in MDD to date. We cannot be certain that we will be able to submit an NDA with the FDA and MAA with the EMA for our proprietary formulation of brexanolone in PPD as planned or within the time-frames we expect, and we cannot be certain we will receive approval. We cannot be certain we will be able to complete ongoing and planned clinical trials and nonclinical studies of our other product candidates, or announce results, on the time-lines we expect. We cannot be certain that we will be able to advance our product candidates into additional trials, or to successfully develop, or obtain regulatory approval for, or successfully commercialize, any of our product candidates;
- Clinical trial results are subject to interpretation and we cannot be certain that the results of our completed Phase 3 clinical trials of brexanolone in PPD are sufficient to support acceptance for filing or approval of an NDA or MAA in PPD. Regulatory authorities may, despite prior advice on development, decide that the clinical and nonclinical data from our brexanolone development program in PPD are not sufficient to support filing for regulatory approval or the acceptance of the NDA or MAA for review or do not support the grant of regulatory approval,

and may require additional trials, analyses or data. If our NDA or MAA for brexanolone as a potential treatment for PPD is not filed, accepted for review and approved, it could materially adversely affect our business and the value of our common stock. We cannot be certain that issues will not arise during inspections by regulatory authorities of our facilities, data and systems or those of our contract research organizations, contract manufacturers or clinical sites that could delay or prevent us from gaining approval of brexanolone IV;

- We cannot be certain that the results of clinical trials or nonclinical studies of any of our other product candidates will be positive or support further development. Positive results from earlier nonclinical studies and clinical trials of our product candidates are not necessarily predictive of the results of later nonclinical studies and clinical trials with the same or different compounds. If we cannot replicate the positive results from our earlier nonclinical studies and clinical trials of our product candidates in our later nonclinical studies and clinical trials or if other negative data is generated, we may be unable to successfully develop, obtain regulatory approval for and commercialize our product candidates;
- The number of patients with PPD, MDD, bipolar depression, Parkinson's disease, and the other diseases and disorders for which we are developing product candidates has not been established with precision. In estimating the potential prevalence of indications we are pursuing, or may in the future pursue, including our estimates as to the prevalence of PPD, we have applied assumptions and assessments with respect to available information that may not prove to be correct. In each case, there is a range of estimates in the published literature 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 or results obtained from certain studies analyzing limited claims databases. We believe this difference is due to variations in methodologies and a possible under-diagnosis of PPD as a result of lack of screening and under-reporting, and patients being reluctant to seek treatment in clinical practice. The actual number of patients with PPD, MDD, Parkinson's disease, bipolar depression or any other indication in which we elect to pursue development of our product candidates may, however, be significantly lower than our estimates. In addition, our products, if approved, may be approved for use or used in only a subset of the patients with these diseases or disorders. If the actual number of patients with these diseases or disorders or any other diseases or disorders we elect to pursue with our product candidates, or the subset that is appropriate for use of our product candidates, is smaller than we anticipate, we may encounter difficulties in enrolling patients in our clinical trials, thereby delaying completion of our clinical trials or delaying or preventing development of our product candidates, and even if such product candidates are approved, our revenue and ability to achieve profitability may be materially adversely affected;
- The identification of serious adverse events or other undesirable side effects during the use of brexanolone IV, SAGE-217, SAGE-718 or any of our other product candidates in ongoing or planned clinical trials, emergency-use cases, investigator sponsored trials, expanded access programs, or nonclinical studies may adversely affect our development of such product candidates or our ability to obtain regulatory approval;
- The reported results of our Phase 3 clinical trials of brexanolone in PPD and Phase 2 clinical trial of SAGE-217 in MDD and other indications consist of only top-line data from the study. Top-line data are based on a preliminary analysis of currently available efficacy and safety data, and therefore these currently reported results are subject to change following a comprehensive review of the more extensive data we expect to receive. The top-line data are based on important assumptions, estimations, calculations and information currently available to us, and we have not received or had an opportunity to evaluate all of the data from these

trials. As a result, we may have additional or different conclusions or conclusions that may qualify the top-line results, once the complete data have been received and fully evaluated. If the full data set or conclusions from the full data set differ from the top line data reported, our ability to obtain approval for, and commercialize, brexanolone IV for PPD, or our view as to the opportunity for SAGE-217 for MDD and other indications, may be harmed, which could materially adversely affect our business, financial condition, results of operations and prospects and the value of our common stock;

- We cannot be certain as to what the FDA or other regulatory authorities will require in future clinical trials of SAGE-217 in MDD. For example, the FDA may require different endpoints than those studied in our earlier trials. Even if the endpoints are the same, the earlier studies of SAGE-217 in MDD may not be predictive of the results obtained in future studies;
- We may face challenges in identifying, recruiting and enrolling patients to participate in clinical trials, including and due to: the small size of a patient population; the acute nature of a disease; the lack of proximity of some patients to trial sites; challenges in meeting regulatory and material requirements to commence clinical trials in countries outside the United States; eligibility criteria for the clinical trial; challenges associated with the nature of the clinical trial protocol; the availability of existing treatments for the relevant disease; the requirement for in-patient stays with respect to some of our trials; and competition from other clinical trial programs for similar indications, and such challenges may delay enrollment of patients in existing or future clinical trials of our other product candidates. Failures or delays in completion of our ongoing and planned clinical trials of our 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 product candidate and generate revenue and continue our business;
- A Fast Track designation or Breakthrough Therapy designation by the FDA and PRIME designation by the EMA may not actually lead to a faster development or regulatory review or approval process. Changes in regulatory requirements, regulatory authority guidance or unanticipated events during our nonclinical studies and clinical trials of our product candidates may occur, which may result in changes in requirements with respect to nonclinical studies and clinical trial protocols or result in the need for additional nonclinical studies and clinical trial requirements, which could result in increased costs to us and could delay our development timeline. The drug development process can take many years, and may include post-marketing studies and surveillance, which will require the expenditure of substantial resources. For example, of the large number of drugs in development in the United States, only a small percentage will successfully complete the FDA regulatory approval process and will be commercialized;
- Even if we receive marketing approval for our product candidates, regulatory or other governmental authorities may still impose significant restrictions on our products, including restrictions on indicated uses or marketing, or may impose ongoing requirements for potentially costly post-approval studies. For example, if we are successful in our efforts to obtain approval of brexanolone IV and other product candidates, we expect that, prior to product launch, the U.S. Drug Enforcement Agency, or DEA, will need to determine the controlled substance schedule of brexanolone IV and possibly such other product candidates, taking into account the recommendation of the FDA. The process may delay our ability to market any such product if it is approved. Any of these factors, many of which are beyond our control, could jeopardize or delay our ability to obtain regulatory approval for and successfully market our product candidates. Any such setback would have a material adverse effect on our business and prospects. Even if we receive marketing approval in the United States, we may never seek or receive regulatory approval outside the United States;

- The commercial success of our product candidates, if approved by the FDA or other applicable regulatory authorities, will depend upon the awareness and acceptance of our approved products among the medical community, including physicians, patients and private and governmental healthcare payors, and we may not be able to achieve such acceptance at satisfactory levels. Even if we are able to successfully develop our product candidates and obtain marketing approval in a country, we may not be able to obtain pricing and reimbursement at acceptable levels or at all, and any pricing and reimbursement approval we may obtain may be subject to significant hurdles or restrictions on reimbursement;
- With respect to some 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 those product candidates, if approved;
- If we are unable to adequately protect our proprietary technology, or obtain and maintain issued patents or other forms of data and market exclusivity 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; and
- We rely completely on third party suppliers to manufacture our product candidates for nonclinical studies and clinical trials, and we intend to continue to rely on third parties to produce nonclinical, clinical and commercial supplies of our product candidates in the future. We do not yet have long-term supply agreements in place. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the requirements of the FDA and other applicable regulatory authorities, or if we are unable to secure supply, we would need to find alternative manufacturing facilities which may adversely impact our ability to develop, obtain regulatory approval of and commercialize our product candidates or the timing of such events.
- As of September 30, 2017, our cash, cash equivalents and marketable securities were $243.5 million. Under Accounting Standards Update, or ASU, 2014-15, *Presentation of Financial Statements—Going Concern* (Subtopic 205-40), or, ASC 205-40, we have the responsibility to evaluate whether conditions or events raise substantial doubt about our ability to meet our future financial obligations as they become due within one year after the date the financial statements are issued. Under ASC 205-40, this evaluation initially cannot take into consideration the potential mitigating effects of plans that have not been fully implemented as of the date the financial statements are issued. In the quarterly report on Form 10-Q for the three and nine months ended September 30, 2017, we reported that, based on the cash, cash equivalents and marketable securities that we had available at the end of the third quarter, we anticipated that our existing capital resources would enable us to meet our planned operational expenses and capital expenditures, based on our current operating plans, only into the second quarter of calendar year 2018. We determined that this cash runway along with our accumulated deficit, history of losses, and future expected losses met the ASC 205-40 standard for raising substantial doubt about our ability to continue as a going concern within one year from the issuance date of the most recent consolidated financial statements for the three and nine months ended September 30, 2017 which were filed with the SEC on November 2, 2017. In November 2017, after the date our quarterly financials were filed with the SEC, we raised $325.8 million of net proceeds from the sale of common stock.

The offering	
Common stock offered by us	$575,000,000 of shares of common stock
Common stock outstanding following the offering	45,199,154 shares of common stock
Underwriters' option to purchase additional shares	We have granted the underwriters an option to purchase up to an additional $86.3 million of shares of common stock. The underwriters can exercise this option at any time within 30 days from the date of this prospectus supplement.
Use of proceeds	We expect to receive from this offering approximately $551.6 million (or approximately $634.4 million if the underwriters exercise their option to purchase additional shares in full), after deducting estimated underwriting discounts and commissions and estimated offering expenses. We intend to use the net proceeds from this offering to fund the advancement of our development and commercial capabilities with the goal of building a leading CNS biotech company; the continued growth of our commercial, manufacturing, quality, and medical affairs capabilities to support our goal of transitioning from a development-stage company to a multi-product, commercial-stage biotech company, including to support the potential launch of brexanolone in PPD, if approved; the advancement and potential acceleration of development for SAGE-217 in depressive disorders and other indications; research and development expenses, including ongoing or planned SAGE-217 clinical trials in MDD, PPD, bipolar depression, Parkinson's disease, sleep disorders, and other potential clinical trials; advancement of our other clinical and preclinical programs focused on developing new classes of CNS therapeutics, including SAGE-718, SAGE-324, and other pipeline candidates for potential CNS indications; and for working capital, capital expenditures, and general corporate purposes.
The Nasdaq Global Market symbol	"SAGE"
Risk factors	Investing in our securities involves risks. See "Risk Factors" beginning on page S-20 of this prospectus supplement and other information included or incorporated by reference into this prospectus supplement and the accompanying prospectus for a discussion of the factors you should carefully consider before deciding to invest in our securities.

The number of shares of our common stock to be outstanding after the offering is based on 42,002,934 shares of common stock outstanding as of December 31, 2017, and assumes the sale of $575.0 million of shares of common stock at an assumed offering price of $179.90 per share, the last reported price of our common stock on the Nasdaq Global Market on February 6, 2018, and excludes:

- 5,586,593 shares of common stock issuable upon the exercise of stock options outstanding as of December 31, 2017, at a weighted average exercise price of $43.58 per share;
- 29,100 shares of common stock issuable upon the vesting of restricted stock units outstanding as of December 31, 2017;
- 1,999,165 shares of common stock reserved for future issuance under our 2014 Stock Option and Incentive Plan, or the 2014 Plan, and 2016 Inducement Equity Plan, or 2016 Plan, as of December 31, 2017, plus any future increases in the number of shares of common stock reserved for issuance under the 2014 Plan pursuant to the evergreen provision of the 2014 Plan; and
- 251,931 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan as of December 31, 2017.

Except as otherwise indicated, all information in this prospectus supplement assumes:

- no exercise by the underwriters of their option to purchase up to an additional $86,250,000 of shares of common stock in this offering; and
- no exercise of stock options after December 31, 2017.

Risk factors

Investing in our securities involves a high degree of risk. In addition to the other information contained in this prospectus supplement, the accompanying prospectus and in the documents we incorporate by reference, you should carefully consider the risks discussed below and under the heading "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the SEC on February 24, 2017, and in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2017, filed with the SEC on November 2, 2017, as updated by our subsequent filings under the Exchange Act, before making a decision about investing in our securities. Such risks and uncertainties and those discussed below are not the only ones facing us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. If any of these risks occur, our business, financial condition and operating results could be harmed, the trading price of our common stock could decline and you could lose part or all of your investment.

Risks related to this offering and our common stock

The price of our common stock historically has been volatile, which may affect the price at which you could sell the common stock.

For the year to date, the market price for our common stock has varied between a high closing price of $192.33 on February 1, 2018 and a low closing price of $162.61 on January 8, 2018. This volatility may affect the price at which you could sell the common stock. Our stock price is likely to continue to be volatile and subject to significant price and volume fluctuations in response to market and other factors, including the other factors discussed in our Annual Report on Form 10-K for the year ended December 31, 2016, our Quarterly Report on Form 10-Q for the quarter ended September 30, 2017 or in future periodic reports; variations in our quarterly operating results from our expectations or those of securities analysts or investors; downward revisions in securities analysts' estimates; and announcement by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments.

We have broad discretion in the use of the net proceeds from this offering and our existing cash and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering, including for any of the purposes described in the section entitled "Use of Proceeds," as well as our existing cash, and you will be relying on the judgment of our management regarding such application. You will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. Our management might not apply the net proceeds or our existing cash in ways that ultimately increase the value of your investment. If we do not invest or apply the net proceeds from this offering or our existing cash in ways that enhance stockholder value, we may fail to achieve expected results, which could cause our stock price to decline. Pending their use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders.

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

Investors purchasing shares of common stock in this offering will pay a price per share that substantially exceeds the as adjusted book value per share of our tangible assets as of September 30, 2017 after subtracting our liabilities. As a result, investors purchasing shares of common stock in this offering will incur immediate dilution of $161.44 per share, based on the difference between the assumed public offering price of $179.90 per share, the last reported sale price of our common stock

on the Nasdaq Global Market on February 6, 2018, and the as adjusted net tangible book value per share of our outstanding common stock based on 37,524,638 shares of common stock outstanding as of September 30, 2017.

This dilution is due to the substantially lower price paid by some of our investors who purchased shares prior to this offering as compared to the price offered to the public in this offering, and the exercise of stock options granted to our employees. In addition, as of September 30, 2017, options to purchase 5,938,177 shares of our common stock at a weighted average exercise price of $40.35 per share were outstanding. The exercise of any of these options would result in additional dilution. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. Further, because we will need to raise additional capital to fund our future activities, we may in the future sell substantial amounts of common stock or securities convertible into or exchangeable for common stock.

These future issuances of common stock or common stock-related securities, together with the exercise of outstanding options and any additional shares issued in connection with acquisitions, if any, may result in further dilution. For a further description of the dilution that you will experience immediately after this offering, see “Dilution.”

Sales of a substantial number of shares of our common stock in the public market or sales under existing 10b5-1 plans by our Section 16 officers could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that sales may have on the prevailing market price of our common stock.

In addition, the sale of substantial amounts of our common stock could adversely impact its price. As of December 31, 2017, 42,002,934 shares of our common stock were outstanding and options to purchase 5,586,593 shares of our common stock (of which 2,045,229 were exercisable as of that date). The sale or the availability for sale of a large number of shares of our common stock in the public market could cause the price of our common stock to decline.

We along with our directors and executive officers have agreed that for a period of 90 days (with respect to us and our executive officers), and 30 days (with respect to our directors) after the date of this prospectus supplement, subject to specified exceptions, including trades under existing 10b5-1 plans, we or they will not offer, sell, contract to sell, pledge or otherwise dispose of, directly or indirectly, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock. These lock-up periods affect approximately 1,281,114 shares of our common stock as of December 31, 2017. Certain of our representatives may, in their sole discretion, release all or some portion of the shares subject to lock-up agreements at any time and for any reason. Sales of a substantial number of such shares upon expiration of the lock-up and market stand-off agreements, the perception that such sales may occur, or early release of these agreements, could cause our market price to fall or make it more difficult for you to sell your common stock at a time and price that you deem appropriate.

A number of our Section 16 officers and directors have established 10b5-1 plans under which their shares of our stock will be sold at prices and in amounts established in the plans. These sales may occur during or after the lock-up period. Sales of stock by any of our directors, executive officers or principal stockholders, including under 10b5-1 plans, could have a material adverse effect on the trading price of our common stock.

Certain holders of shares of our common stock are entitled to rights with respect to the registration of their shares under the Securities Act. See “Description of Capital Stock—Registration

Rights." Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these stockholders could have a material adverse effect on the trading price of our common stock.

The market price of our common stock may be adversely affected by market conditions affecting the stock markets in general, including price and trading fluctuations on The Nasdaq Global Market.

Market conditions may result in volatility in the level of, and fluctuations in, market prices of stocks generally and, in turn, our common stock and sales of substantial amounts of our common stock in the market, in each case being unrelated or disproportionate to changes in our operating performance. The overall weakness in the economy has recently contributed to the extreme volatility of the markets which may have an effect on the market price of our common stock.

Comprehensive tax reform legislation could adversely affect our business and financial condition.

On December 22, 2017, President Trump signed into law the "Tax Cuts and Jobs Act" (TCJA) that significantly reforms the Internal Revenue Code of 1986, as amended (the "Code"). The TCJA, among other things, includes changes to U.S. federal tax rates, imposes significant additional limitations on the deductibility of interest and net operating loss carryforwards, allows for the expensing of capital expenditures, and puts into effect the migration from a "worldwide" system of taxation to a territorial system. Our net deferred tax assets and liabilities will be revalued at the newly enacted U.S. corporate rate. We do not expect to recognize any tax expense in the year of enactment as our net deferred tax assets have a full valuation allowance recorded. We continue to examine the impact this tax reform legislation may have on our business. The impact of this tax reform is uncertain and could be adverse. This prospectus supplement does not discuss any such tax legislation or the manner in which it might affect purchasers of our common stock. We urge our stockholders, including purchasers of common stock in this offering, to consult with their legal and tax advisors with respect to such legislation and the potential tax consequences of investing in our common stock.

Use of proceeds

We estimate that the net proceeds from the sale of shares of common stock offered hereby will be approximately $551.6 million, based on an assumed public offering price of $179.90 per share (the last reported sale price of our common stock on the Nasdaq Global Market on February 6, 2018), and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, or approximately $634.4 million if the underwriters exercise their option in full to purchase additional shares of common stock.

Each $1.00 increase (decrease) in the assumed public offering price of $179.90 per share, the last reported sale price of our common stock on the Nasdaq Global Market on February 6, 2018, would (decrease) increase the number of shares of common stock to be issued by us in this offering by (17,669) and 17,866, respectively, assuming the aggregate dollar amount of shares offered by us, as set forth on the cover page of this prospectus, remains the same. We may also increase or decrease the aggregate dollar amount of shares we are offering. Each increase (decrease) of $1.0 million of shares offered by us would increase (decrease) the net proceeds of this offering by approximately $0.96 million, assuming that the assumed public offering price remains the same, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. The as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

We intend to use the net proceeds from this offering, plus, if needed, cash on hand, for the advancement of our development and commercial capabilities with the goal of building a leading CNS biotech company; the continued growth of our commercial, manufacturing, quality, and medical affairs capabilities to support our goal of transitioning from a development-stage company to a multi-product, commercial-stage biotech company, including to support the potential launch of brexanolone in PPD, if approved; the advancement and potential acceleration of development for SAGE-217 in depressive disorders and other indications; research and development expenses, including ongoing or planned SAGE-217 clinical trials in MDD, PPD, bipolar depression, Parkinson’s disease, sleep disorders, and other potential clinical trials; advancement of our other clinical and preclinical programs focused on developing new classes of CNS therapeutics, including SAGE-718, SAGE-324, and other pipeline candidates for potential CNS indications; and for working capital, capital expenditures, and general corporate purposes.

Although it is difficult to predict our liquidity requirements, based upon our current operating plan we anticipate that the net proceeds of this offering, together with our existing capital resources and estimated brexanolone IV product sales, if the product is approved, will enable us to fund our operating expenses and capital expenditure requirements into 2020.

The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the scope and results of our regulatory activities, the progress of our development efforts, the status of and results from nonclinical studies and ongoing clinical trials or any clinical trials we may commence in the future, the scope and timing of our commercial build, the nature and scope of our other launch preparation activities and the nature and scope of our E.U. operations, as well as any collaborations that we may enter into with third parties for our product candidates and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

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

Dilution

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

As of September 30, 2017, we had net tangible book value of approximately $200.1 million, or $5.33 per share of our common stock, based upon 37,524,638 shares of our common stock outstanding as of that date. Historical net tangible book value per share is equal to our total tangible assets, less total liabilities, divided by the number of outstanding shares of our common stock. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the sale of 3,196,220 shares of common stock in this offering at an assumed public offering price of $179.90 per share (the last reported sale of our common stock on the Nasdaq Global Market on February 6, 2018) and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2017 would have been approximately $751.7 million, or approximately $18.46 per share of common stock. This represents an immediate increase in as adjusted net tangible book value of $13.13 per share to our existing stockholders and an immediate dilution of $161.44 per share to investors participating in this offering at the public offering price.

Dilution per share to new investors is determined by subtracting net tangible book value per share after this offering from the public offering price per share paid by new investors. The following table illustrates this per share dilution (assuming the underwriters do not exercise in full their option to purchase additional shares):

Assumed public offering price per share		$179.90
Historical net tangible book value per share as of September 30, 2017	$ 5.33	
Increase in net tangible book value per share attributable to new investors	$13.13	
As adjusted net tangible book value per share after this offering		$ 18.46
Dilution per share to new investors		$161.44

Each $1.00 increase (decrease) in the assumed public offering price of $179.90 per share, the last reported sale price of our common stock on the Nasdaq Global Market on February 6, 2018, would (decrease) increase the number of shares of common stock to be issued by us in this offering by (17,669) and 17,866, respectively, assuming the aggregate dollar amount of shares offered by us, as set forth on the cover page of this prospectus, remains the same. We may also increase or decrease the aggregate dollar amount of shares we are offering. Each increase (decrease) of $1.0 million of shares offered by us would increase (decrease) the net proceeds of this offering by approximately $0.96 million, assuming that the assumed public offering price remains the same, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. The as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

The foregoing table and discussion is based on 37,524,638 shares of common stock outstanding as of September 30, 2017, and excludes:

- 5,938,177 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2017, at a weighted average exercise price of $40.35 per share;

- 30,100 shares of common stock issuable upon the vesting of restricted stock units outstanding as of September 30, 2017;
- 2,125,783 shares of common stock reserved for future issuance under the 2014 Plan and 2016 Plan, as of September 30, 2017, plus any future increases in the number of shares of common stock reserved for issuance under the 2014 Plan pursuant to the evergreen provision of the 2014 Plan;
- 251,931 shares of common stock reserved for future issuance under our 2014 Employee Stock Purchase Plan as of September 30, 2017; and
- 4,058,822 shares of common stock in connection with the November 2017 Offering.

If the underwriters exercise in full their option to purchase an assumed 479,433 additional shares of common stock at the public offering price of $179.90 per share, the last reported sale price of our common stock on the Nasdaq Global Market on February 6, 2018, the as adjusted net tangible book value after this offering would be $20.25 per share, representing an increase in net tangible book value of $14.92 per share to existing stockholders and immediate dilution in net tangible book value of $159.65 per share to investors purchasing our common stock in this offering at the assumed public offering price.

To the extent that any options are exercised, new options are issued under our equity incentive plans, or we otherwise issue additional shares of common stock in the future (including shares issued in connection with acquisitions), there will be further dilution to new investors.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

Description of capital stock

This section describes the general terms of our common stock. For more detailed information, a holder of our common stock should refer to our certificate of incorporation and our by-laws, copies of which are filed with the SEC as exhibits to the registration statement of which this prospectus supplement and the accompanying prospectus are a part.

General

Our authorized capital stock consists of 120,000,000 shares of common stock, $0.0001 par value per share, and 5,000,000 shares of preferred stock, $0.0001 par value per share. As of September 30, 2017, there were 37,524,638 shares of our common stock outstanding and no shares of preferred stock were outstanding.

The following summary description of our capital stock is based on the provisions of our amended and restated certificate of incorporation and amended and restated bylaws and the applicable provisions of the Delaware General Corporation Law. This information is qualified entirely by reference to the applicable provisions of our amended and restated certificate of incorporation, amended and restated bylaws and the Delaware General Corporation Law.

Common stock

We are authorized to issue one class of common stock. Holders of our common stock are entitled to one vote for each share of common stock held of record for the election of directors and on all matters submitted to a vote of stockholders. Holders of our common stock are entitled to receive dividends ratably, if any, as may be declared by our board of directors out of legally available funds, subject to any preferential dividend rights of any preferred stock then outstanding. Upon our dissolution, liquidation or winding up, holders of our common stock are entitled to share ratably in our net assets legally available after the payment of all our debts and other liabilities, subject to the preferential rights of any preferred stock then outstanding. Holders of our common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future. Except as described under “Antitakeover Effects of Delaware Law and Provisions of our Certificate of Incorporation and By-laws” below, a majority vote of the holders of common stock is generally required to take action under our amended and restated certificate of incorporation and amended and restated by-laws.

Preferred stock

Our board of directors 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. Our board of directors can designate the rights, preferences and privileges of the shares of each series and any of its qualifications, limitations or restrictions. Our board of directors 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. The issuance of preferred stock, while providing flexibility in connection with possible future financings and acquisitions and other corporate purposes could, under certain circumstances, have the effect of restricting dividends on our common stock, diluting the voting power of our common stock, impairing the liquidation rights of our common stock, or delaying, deferring or preventing a change in control of our company, which might harm the market price of our common

stock. See also “Antitakeover Effects of Delaware Law and Provisions of our Certificate of Incorporation and By-laws—Provisions of our amended and restated certificate of incorporation and amended and restated by-laws—Undesignated Preferred Stock” below.

Our board of directors will make any determination to issue such shares based on its judgment as to our Company’s best interests and the best interests of our stockholders. We have no shares of preferred stock outstanding and we have no current plans to issue any shares of preferred stock following completion of this offering.

Registration rights

The holders of 547,916 shares of our common stock or their permitted transferees are entitled to rights with respect to the registration of these securities under the Securities Act. These rights are provided under the terms of the investor rights agreement. The investor rights agreement includes demand registration rights, short-form registration rights and piggyback registration rights. All fees, costs and expenses of underwritten registrations under the investor rights agreement will be borne by us and all selling expenses, including underwriting discounts and selling commissions, will be borne by the holders of the shares being registered.

Demand registration rights

The holders of 547,916 shares of our common stock or their permitted transferees are entitled to demand registration rights. Under the terms of the investor rights agreement, we will be required, upon the written request of holders of 25% of these securities, to file a registration statement and use commercially reasonable efforts to effect the registration of all or a portion of these shares for public resale. We are required to effect only two registrations pursuant to this provision of the investor rights agreement.

Short form registration rights

The holders of 547,916 shares of our common stock or their permitted transferees are also entitled to short form registration rights. Pursuant to the investor rights agreement, if we are eligible to file a registration statement on Form S-3, upon the request of 15% of these holders to sell registrable securities at an aggregate price of at least $1.0 million, we will be required to use our commercially reasonable efforts to effect a registration of such shares. We are required to effect only two registrations in any twelve month period pursuant to this provision of the investor rights agreement.

Piggyback registration rights

The holders of 547,916 shares of our common stock or their permitted transferees are entitled to piggyback registration rights. If we register any of our securities either for our own account or for the account of other security holders, the holders of these shares are entitled to include their shares in the registration. Subject to certain exceptions contained in the investor rights agreement, we and the underwriters may limit the number of shares included in the underwritten offering if the underwriters determine in good faith that marketing factors require a limitation of the number of shares to be underwritten. The requisite holders have waived registration rights in connection with this offering.

Indemnification

Our investor rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

Expiration of registration rights

The registration rights granted under the investor rights agreement will terminate upon the earlier of (i) a deemed liquidation event, as defined in our amended and restated certificate of incorporation, (ii) at such time when all registrable securities could be sold without restriction under Rule 144 of the Securities Act or (iii) the fifth anniversary of our initial public offering.

Anti-takeover effects of Delaware Law, our certificate of incorporation and our by-laws

Certain provisions of the Delaware General Corporation Law and of our amended and restated certificate of incorporation and amended and restated by-laws could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids and, as a consequence, they might also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions are also designed in part to encourage anyone seeking to acquire control of us to first negotiate with our board of directors. These provisions might also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders might otherwise deem to be in their best interests. However, we believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Delaware takeover statute

We are subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances, but not the outstanding voting stock owned by the interested stockholder; or
- at or after the time the stockholder became interested, the business combination was approved by our board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, lease, pledge, exchange, mortgage or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;

- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Provisions of our amended and restated certificate of incorporation and amended and restated by-laws

Our amended and restated certificate of incorporation and amended and restated by-laws include a number of provisions that may have the effect of delaying, deferring or discouraging another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Board composition and filling vacancies

In accordance with our amended and restated certificate of incorporation, our board is divided into three classes serving staggered three-year terms, with one class being elected each year. Our amended and restated certificate of incorporation also provides that directors may be removed only for cause and then only by the affirmative vote of the holders of 75% or more of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by the affirmative vote of a majority of our directors then in office even if less than a quorum.

No written consent of stockholders

Our amended and restated certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting. This limit may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our by-laws or removal of directors by our stockholder without holding a meeting of stockholders.

Meetings of stockholders

Our amended and restated by-laws provide that only a majority of the members of our board of directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our amended and restated by-laws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance notice requirements

Our amended and restated by-laws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business

to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days or more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in our amended and restated by-laws.

Amendment to by-laws and certificate of incorporation

As required by the Delaware General Corporation Law, any amendment of our amended and restated certificate of incorporation must first be approved by a majority of our board of directors, and if required by law or our amended and restated certificate of incorporation, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment, and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to stockholder action, directors, limitation of liability and the amendment of our amended and restated by-laws and amended and restated certificate of incorporation must be approved by not less than 75% of the outstanding shares entitled to vote on the amendment, and not less than 75% of the outstanding shares of each class entitled to vote thereon as a class. Our amended and restated by-laws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the amended and restated by-laws; and may also be amended by the affirmative vote of at least 75% of the outstanding shares entitled to vote on the amendment, or, if the board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

Undesignated preferred stock

Our amended and restated certificate of incorporation provides for 5,000,000 authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our amended and restated certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Exclusive jurisdiction of certain actions

Our amended and restated certificate of incorporation requires, to the fullest extent permitted by law, that derivative actions brought in our name, actions against our directors, officers and employees for breach of fiduciary duty and other similar actions may be brought only in the Court of Chancery in the State of Delaware, unless we otherwise consent. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers.

Transfer agent and registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

Price range of common stock

Our common stock began trading on The Nasdaq Global Market under the symbol “SAGE” on July 18, 2014. Prior to that time, there was no public market for our common stock. The following table sets forth the high and low sale prices per share of our common stock, as reported on The Nasdaq Global Market, for the periods indicated:

	Sales prices	
	High	Low
Year ended December 31, 2016		
First quarter	$ 58.23	$ 26.28
Second quarter	$ 39.99	$ 26.55
Third quarter	$ 49.89	$ 29.81
Fourth quarter	$ 56.45	$ 38.30
Year ended December 31, 2017		
First quarter	$ 72.06	$ 44.55
Second quarter	$ 88.93	$ 63.23
Third quarter	$ 90.80	$ 60.23
Fourth quarter	$173.36	$ 59.57
Year ending December 31, 2018		
First quarter (through February 6, 2018)	$195.97	$156.63

As of February 6, 2018, there were five record holders of our common stock. The actual number of stockholders 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 and other nominees.

Dividend policy

We have never declared or paid dividends on our capital stock. We do not anticipate paying any dividends on our capital stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. Any future determination to declare dividends will be subject to the discretion of our board of directors and will depend on various factors, including applicable laws, our results of operations, financial condition, future prospects and any other factors deemed relevant by our board of directors. Investors should not purchase our common stock with the expectation of receiving cash dividends.

Underwriting

We are offering the shares of common stock described in this prospectus supplement through a number of underwriters. J.P. Morgan Securities LLC, Goldman Sachs & Co. LLC and Morgan Stanley & Co. LLC are acting as joint book-running managers of the offering and as representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus supplement, the number of shares of common stock listed next to its name in the following table:

Underwriter	Number of shares
J.P. Morgan Securities LLC	
Goldman Sachs & Co. LLC	
Morgan Stanley & Co. LLC	
Total	

The underwriters are committed to purchase all the shares offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters propose to offer the shares of common stock directly to the public at the public offering price set forth on the cover page of this prospectus supplement and to certain dealers at that price less a concession not in excess of $ per share. After the initial offering of the shares to the public, the offering price and other selling terms may be changed by the underwriters. Sales of shares made outside of the United States may be made by affiliates of the underwriters. The offering of the shares by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

The underwriters have an option to buy up to additional shares of common stock from us at the public offering price, less the underwriting discount, to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus supplement to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is $ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters and proceeds before expenses to us, assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without option	With option
Per share underwriting discounts and commissions	$	$
Total underwriting discounts and commissions	$	$
Proceeds, before expenses, to us	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $. The underwriters have agreed to reimburse us for certain expenses related to this offering. We have agreed to reimburse the underwriters for all expenses related to the clearance of the offering with the Financial Industry Regulatory Authority (in an amount not to exceed $20,000).

A prospectus supplement in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

In connection with this offering, we and each of our directors and executive officers have agreed that, for a period of 90 days, with respect to us and our executive officers and 30 days with respect to our directors, after the date of this prospectus supplement, subject to specified exceptions, not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock without first obtaining the written consent of J.P. Morgan Securities LLC, and Goldman Sachs & Co. LLC. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly:

- offer, pledge, sell or contract to sell any common stock,
- sell any option or contract to purchase any common stock,
- purchase any option or contract to sell any common stock,
- grant any option, right or warrant for the sale of any common stock,
- lend or otherwise dispose of or transfer any common stock,
- publicly disclose the intention to make any such offer, sale, pledge or disposition of any common stock,
- request or demand that we file a registration statement related to the common stock, or
- enter into any swap or other agreement that transfers, in whole or in part, the economic consequence of ownership of any common stock whether any such swap or transaction is to be settled by delivery of shares or other securities, in cash or otherwise.

The restrictions described in the immediately preceding paragraph do not apply to:

- the sale of shares of our common stock to the underwriters pursuant to the terms of the underwriting agreement,
- the issuance by us of shares of our common stock upon the exercise or conversion of a security outstanding on the date of this prospectus supplement,
- the issuance by us of shares of our common stock or other securities convertible into or exercisable for shares of common stock issued in connection with a joint venture, marketing or distribution arrangement, collaboration agreement, intellectual property license agreement, or any acquisition of assets or not less than a majority or controlling portion of the equity of another entity, provided that (x) the aggregate number of shares of common stock or securities convertible into or exercisable for common stock that we may issue shall not exceed 5.0% of the total number of shares of common stock issued and outstanding immediately following the completion of this offering, and (y) all recipients of any such securities shall enter into lock-up agreements,

- sales of securities acquired in open market transactions after the date of the this offering,
- transfers of shares of our common stock or other securities as bona fide gifts or by will or intestacy to the legal representative, heir, beneficiary or a member of the immediate family of the person or entity in a transaction not involving a disposition for value,
- in the case of lock-up agreements signed by directors and officers, transfers or dispositions of shares of our common stock or other securities to any trust for the direct or indirect benefit of the director or officer signing the lock-up agreement or the immediate family of such person, in each case for estate planning purposes,
- in the case of a lock-up agreement signed by a trust, distributions of shares of our common stock or any security directly or indirectly convertible into our common stock to its beneficiaries in a transaction not involving a disposition for value,
- in the case of lock-up agreements signed by a corporation, limited liability company, partnership or other entity, distribution of shares of our common stock or any security directly or indirectly convertible into shares of our common stock to members, stockholders, limited partners, subsidiaries or affiliates of such entity or to any investment fund or other entity that controls or manages such entity in a transaction not involving a disposition for value,
- transfers to us pursuant to agreements under which we have the option to repurchase shares or securities upon termination of service of the person or entity, provided that the repurchase price for any such shares or securities shall not exceed the original purchase price paid to the Company for such shares or securities,
- the receipt by the person or entity from us of shares of our common stock upon the exercise of options, provided that any such shares of common stock received upon such exercise shall be subject to the same restrictions,
- the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of common stock, provided that such plan does not provide for any transfers of common stock, and no filing with the SEC or other public announcement shall be required or voluntarily made by the director or officer or any other person in connection therewith, in each case during the applicable 90-day or 30-day restricted period, or any extension thereof pursuant to the lock-up agreement, or
- sales or transfers of common stock made pursuant to a trading plan that satisfies the requirements of Rule 10b5-1 under the Exchange Act that has been entered into prior to the date of the lock-up agreement, provided that no amendments or other modifications are made to such plans and that, to the extent a public announcement or filing under the Exchange Act, if any, is required or voluntarily made by or on behalf of the director, officer or the Company regarding any such sales or transfers, such announcement or filing shall include a statement to the effect that the sale or transfer was made pursuant to a trading plan pursuant to Rule 10b5-1.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for or repayable with common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition.

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they

are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be “covered” shorts, which are short positions in an amount not greater than the underwriters’ option to purchase additional shares referred to above, or may be “naked” shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act of 1933, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

In addition, in connection with this offering certain of the underwriters (and selling group members) may engage in passive market making transactions in our common stock on The Nasdaq Global Market prior to the pricing and completion of this offering. Passive market making consists of displaying bids on The Nasdaq Global Market no higher than the bid prices of independent market makers and making purchases at prices no higher than these independent bids and effected in response to order flow. Net purchases by a passive market maker on each day are generally limited to a specified percentage of the passive market maker’s average daily trading volume in the common stock during a specified period and must be discontinued when such limit is reached. Passive market making may cause the price of our common stock to be higher than the price that otherwise would exist in the open market in the absence of these transactions. If passive market making is commenced, it may be discontinued at any time.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Certain of the underwriters and their respective affiliates have provided, and may in the future provide, a variety of these services to the issuer and to persons and entities with relationships with the issuer, for which they received or will receive customary fees and expenses.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or

instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus supplement in any jurisdiction where action for that purpose is required. The securities offered by this prospectus supplement may not be offered or sold, directly or indirectly, nor may this prospectus supplement or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus supplement comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus supplement. This prospectus supplement does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus supplement in any jurisdiction in which such an offer or a solicitation is unlawful.

Notice to prospective investors in Canada

The shares of common stock may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the common stock must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to prospective investors in the European Economic Area

In relation to each Member State of the European Economic Area, each, a Relevant Member State, no offer of shares may be made to the public in that Relevant Member State other than:

A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;

B. to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives; or

C. in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares shall require the Company or the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person in a Relevant Member State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed that it is a "qualified investor" within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive. In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

The Company, the representatives and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

For the purpose of the above provisions, the expression "an offer to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in the Relevant Member State by any measure implementing the Prospectus Directive in the Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC, as amended, including by Directive 2010/73/EU.

Notice to prospective investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the Order, and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). This document must not be acted on or relied on in the United Kingdom by persons who are not relevant persons. In the United Kingdom, any investment or investment activity to which this document relates is only available to, and will be engaged in with, relevant persons.

Notice to prospective investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes ("CISA"). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to prospective investors in the Dubai International Financial Centre

This prospectus supplement relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or the DFSA. This prospectus supplement is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for the prospectus supplement. The shares to which this prospectus supplement relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus supplement you should consult an authorized financial advisor.

Notice to prospective investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the "Corporations Act"), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons, or the Exempt Investors, who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Notice to prospective investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures

Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to prospective investors in Japan

The shares have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, "Japanese Person" shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to prospective investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of Non-CIS Securities may not be circulated or distributed, nor may the Non-CIS Securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Non-CIS Securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Non-CIS Securities pursuant to an offer made under Section 275 of the SFA except:

(a) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(b) where no consideration is or will be given for the transfer;

(c) where the transfer is by operation of law;

(d) as specified in Section 276(7) of the SFA; or

(e) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Material U.S. federal income tax considerations for non-U.S. holders

The following is a summary of the material U.S. federal income tax considerations of the ownership and disposition of our common stock to non-U.S. holders (defined below), but does not purport to be a complete analysis of all the potential tax considerations relating thereto. This summary is based upon the provisions of the Internal Revenue Code of 1986, as amended, or the Code, Treasury regulations promulgated thereunder, administrative rulings and judicial decisions, all as of the date hereof. These authorities may be changed or subject to differing interpretations, possibly with retroactive effect, so as to result in U.S. federal income tax consequences different from those set forth below. We have not sought any ruling from the Internal Revenue Service, or the IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions.

This summary also does not address the tax considerations arising under the laws of any U.S. state or local or any non-U.S. jurisdiction, U.S. federal estate or gift tax laws, the Medicare tax on net investment income or any alternative minimum tax consequences. In addition, this discussion does not address tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

- banks, insurance companies or other financial institutions;
- tax-exempt organizations;
- dealers in securities or currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons that own, or are deemed to own, more than five percent of our capital stock;
- certain former citizens or long-term residents of the United States;
- persons who hold our common stock as a position in a hedging transaction, "straddle," "conversion transaction" or other risk reduction transaction;
- persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes);
- S corporations, partnerships, or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (or investors in any such entities);
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- regulated investment companies or real estate investment trusts;
- pension plans;
- controlled foreign corporations;
- passive foreign investment companies; or
- persons that acquire our common stock as compensation for services.

In addition, if a partnership, including any entity or arrangement classified as a partnership for U.S. federal income tax purposes, holds our common stock, the tax treatment of a partner generally will depend on the status of the partner and upon the activities of the partnership. Accordingly, partnerships that hold our common stock, and partners in such partnerships, should consult their tax advisors.

You are urged to consult your tax advisor with respect to the application of the U.S. federal income tax laws to your particular situation, as well as any tax consequences of the

purchase, ownership and disposition of our common stock arising under the U.S. federal estate or gift tax rules or under the laws of any U.S. state or local or any non-U.S. or other taxing jurisdiction or under any applicable tax treaty.

Non-U.S. holder defined

For purposes of this discussion, you are a non-U.S. holder if you are a beneficial owner of our common stock that is for United States federal income tax purposes (i) a foreign corporation or any other foreign organization taxable as a corporation for U.S. federal income tax purposes, (ii) a nonresident alien individual, or (iii) a foreign estate or trust that in either case is not subject to U.S. federal income tax on a net-income basis on income or gain from a note or share of common stock.

Distributions

As discussed under “Dividend Policy,” above, we do not anticipate paying any dividends on our capital stock in the foreseeable future. If we were to make distributions on our common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, they will constitute a return of capital and will first reduce your basis in our common stock, but not below zero, and then will be treated as gain from the sale of stock, subject to the tax treatment described in the discussion below regarding taxable dispositions of our common stock. Any such distributions would also be subject to the discussions below regarding backup withholding and FATCA.

Subject to the discussion below regarding a dividend received by you that is effectively connected with the conduct of a U.S. trade or business, a dividend paid to you generally will be subject to U.S. withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty. In order to receive a reduced treaty rate, you must provide us with an IRS Form W-8BEN (generally including a U.S. taxpayer identification number), IRS Form W-8-BEN-E or another appropriate version of IRS Form W-8 (or a successor form), in each case, certifying qualification for the reduced rate.

Dividends received by you that are effectively connected with the conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, are attributable to a permanent establishment maintained by you in the United States) generally are exempt from such withholding tax. In order to obtain this exemption, you must provide us with an IRS Form W-8ECI or successor form or other applicable IRS Form W-8 properly certifying such exemption. Such effectively connected dividends, although not subject to withholding tax, are taxed at the same graduated rates applicable to U.S. persons, net of certain deductions and credits, subject to an applicable income tax treaty providing otherwise. In addition, if you are a corporate non-U.S. holder, you may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty on your earnings and profits in respect of such effectively connected dividend income.

If you are eligible for a reduced rate of withholding tax pursuant to a tax treaty, you may be able to obtain a refund of any excess amounts currently withheld if you file an appropriate claim for refund with the IRS.

Gain on sale or other taxable disposition of common stock

Subject to the discussion below regarding backup withholding and FATCA, a non-U.S. Holder generally will not be required to pay U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with the conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, the gain is attributable to a permanent establishment maintained by you in the U.S.), in which case you will be required to pay tax on the net gain derived from the sale under regular graduated U.S. federal income tax rates, and for a non-U.S. holder that is a corporation, such non-U.S. holder may be subject to the branch profits tax on any earnings and profits attributable to such gains at a 30% rate or such lower rate as may be specified by an applicable income tax treaty;
- you are an individual who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met, in which case you will be required to pay a flat 30% tax on the gain derived from the sale, which tax may be offset by U.S. source capital losses in the taxable year of disposition (even though you are not considered a resident of the United States) (subject to applicable income tax or other treaties); or
- our common stock constitutes a U.S. real property interest by reason of our status as a “U.S. real property holding corporation” for U.S. federal income tax purposes, a USRPHC, at any time within the shorter of the five-year period preceding the disposition or your holding period for our common stock. We believe that we are not currently and will not become a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property relative to the fair market value of our other business assets, there can be no assurance that we will not become a USRPHC in the future. Even if we become a USRPHC, however, as long as our common stock is regularly traded on an established securities market (as determined under the Code), such common stock will be treated as U.S. real property interests only if you actually or constructively hold more than five percent of such regularly traded common stock at any time during the applicable period that is specified in the Code.

Backup withholding and information reporting

Generally, we must report annually to the IRS the amount of dividends paid to you, your name and address, and the amount of tax withheld, if any. A similar report will generally be sent to you. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in your country of residence.

Payments of dividends or of proceeds on the disposition of stock made to you may be subject to additional information reporting and backup withholding at the then applicable rate unless you establish an exemption, for example by properly certifying your non-U.S. status on an IRS Form W-8BEN, IRS Form W-8BEN-E or another appropriate version of IRS Form W-8 (or a successor form). Notwithstanding the foregoing, backup withholding and information reporting may apply if either we or our paying agent has actual knowledge, or reason to know, that you are a U.S. person.

Backup withholding is not an additional tax; rather, the U.S. income tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a refund or credit may generally be obtained from the IRS, provided that the required information is furnished to the IRS in a timely manner.

Foreign account tax compliance act ("FATCA")

Provisions commonly referred to as "FATCA" may impose withholding tax on certain types of payments made to "foreign financial institutions" and certain other non-U.S. entities. The legislation imposes a 30% withholding tax on dividends on, or gross proceeds from the sale or other disposition of, our common stock paid to a foreign financial institution or to certain non-financial foreign entities, unless (i) the foreign financial institution undertakes certain diligence and reporting obligations, (ii) the non-financial foreign entity either certifies it does not have any substantial U.S. owners or furnishes identifying information regarding each substantial U.S. owner and such entity meets certain other specified requirements, or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the requirements in (i) above, it must enter into an agreement with the U.S. Treasury requiring, among other things, that it undertake to identify accounts held by certain U.S. persons or U.S.-owned foreign entities, annually report certain information about such accounts, and withhold 30% on payments to account holders whose actions prevent it from complying with these reporting and other requirements. If the country in which a payee is resident has entered into an "intergovernmental agreement" with the United States regarding FATCA, that agreement may permit the payee to report to that country rather than to the U.S. Treasury. Under final regulations and published guidance, the obligation to withhold from payments made to a foreign financial institution or a foreign non-financial entity under the new legislation with respect to dividends on our common stock are currently in effect, but with respect to the gross proceeds of a sale or other disposition of our common stock will not begin until January 1, 2019. Prospective investors should consult their tax advisors regarding FATCA.

The preceding discussion of U.S. federal income tax considerations is for general information only. It is not tax advice. Each prospective investor should consult its own tax advisor regarding the particular U.S. federal, state and local and non-U.S. tax consequences of purchasing, holding and disposing of our common stock, including the consequences of any proposed change in applicable laws.

Legal matters

Certain legal matters with respect to the securities offered by this prospectus supplement will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts. Certain legal matters will be passed upon for the underwriters by Ropes & Gray LLP, Boston, Massachusetts.

Experts

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2016 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

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PROSPECTUS

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By this prospectus, we or any selling stockholder may offer and sell from time to time, in one or more offerings, common stock, preferred stock, warrants, debt securities or any combination thereof as described in this prospectus. The warrants may be convertible into or exercisable or exchangeable for common stock or preferred stock, the preferred stock may be convertible into or exchangeable for common stock and the debt securities may be convertible into or exchangeable for common stock or preferred stock. You should carefully read this prospectus, any prospectus supplement and any free writing prospectus, as well as any documents incorporated in any of the foregoing by reference, before you invest in our securities. This prospectus may not be used to sell our securities unless accompanied by a prospectus supplement. The prospectus supplement or any related free writing prospectus may also add to, update, supplement or clarify information contained in this prospectus.

Our common stock is traded on The NASDAQ Global Market under the symbol “SAGE”.

We or any selling stockholder may offer and sell our securities to or through one or more agents, underwriters, dealers or other third parties or directly to one or more purchasers on a continuous or delayed basis. If agents, underwriters or dealers are used to sell our securities, we or any selling stockholder will name them and describe their compensation in a prospectus supplement. The price to the public of our securities and the net proceeds we expect to receive from the sale of such securities will also be set forth in a prospectus supplement. We will not receive any proceeds from the sale of securities by selling stockholders.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. YOU SHOULD REVIEW CAREFULLY THE RISKS AND UNCERTAINTIES REFERENCED UNDER THE HEADING “RISK FACTORS” ON PAGE 7 OF THIS PROSPECTUS AS WELL AS THOSE CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT AND ANY RELATED FREE WRITING PROSPECTUS, AND IN THE OTHER DOCUMENTS THAT ARE INCORPORATED BY REFERENCE INTO THIS PROSPECTUS OR THE APPLICABLE PROSPECTUS SUPPLEMENT.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is January 5, 2016.

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We are responsible for the information contained and incorporated by reference in this prospectus, in any accompanying prospectus supplement, and in any related free writing prospectus we prepare or authorize. We have not authorized anyone to give you any other information, and we take no responsibility for any other information that others may give you. If you are in a jurisdiction where offers to sell, or solicitations of offers to purchase, the securities offered by this documentation are unlawful, or if you are a person to whom it is unlawful to direct these types of activities, then the offer presented in this document does not extend to you. The information contained in this document speaks only as of the date of this document, unless the information specifically indicates that another date applies. Our business, financial condition, results of operations and prospectus may have changed since those dates.

ABOUT THIS PROSPECTUS

This prospectus is part of an automatic shelf registration statement that we filed with the Securities and Exchange Commission, or the SEC, as a “well-known seasoned issuer” as defined in Rule 405 under the Securities Act of 1933, as amended, or the Securities Act. Under this shelf registration, we and/or selling stockholders may offer shares of our common stock and preferred stock, various series of warrants to purchase common stock or preferred stock, debt securities or any combination thereof, from time to time in one or more offerings. This prospectus only provides you with a general description of the securities we and/or selling stockholders may offer. Each time we and/or selling stockholders offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the specific terms of the offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. This prospectus may not be used to sell our securities unless accompanied by a prospectus supplement. Each such prospectus supplement and any free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents incorporated by reference into this prospectus. We urge you to carefully read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the headings “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference” before you invest in our securities.

Neither we nor any selling stockholder have authorized anyone to provide you with information in addition to or different from that contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus. We take no responsibility for, and can provide no assurances as to the reliability of, any information not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we or a selling stockholder may authorize to be provided to you. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading “Where You Can Find Additional Information”.

Unless otherwise mentioned or unless the context requires otherwise, throughout this prospectus, any applicable prospectus supplement and any related free writing prospectus, the words “SAGE”, “we”, “us”, “our”, the “company” or similar references refer to Sage Therapeutics, Inc. and its subsidiaries; and the term “securities” refers collectively to our common stock, preferred stock, warrants to purchase common stock or preferred stock, debt securities, or any combination of the foregoing securities.

We own various U.S. federal trademark registrations and applications and unregistered trademarks, including our corporate logo. This prospectus and the information incorporated herein by reference contains references to trademarks, service marks and trade names owned by us or other companies. Solely for convenience, trademarks, service marks and trade names referred to in this

prospectus and the information incorporated herein, including logos, artwork, and other visual displays, may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks, service marks and trade names. We do not intend our use or display of other companies' trade names, service marks or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus, any applicable prospectus supplement or any related free writing prospectus are the property of their respective owners.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus is part of a registration statement that we have filed with the SEC. Certain information in the registration statement has been omitted from this prospectus in accordance with the rules of the SEC. We are subject to the information requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and, in accordance therewith, file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C., 20549. You may call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room. These documents also may be accessed through the SEC's Electronic Data Gathering, Analysis and Retrieval system, or EDGAR, via electronic means, including the SEC's home page on the Internet (*www.sec.gov*).

We have the authority to designate and issue more than one class or series of stock having various preferences, conversion and other rights, voting powers, restrictions, limitations as to dividends, qualifications and terms and conditions of redemption. See "Description of Securities." We will furnish a full statement of the relative rights and preferences of each class or series of our stock which has been so designated and any restrictions on the ownership or transfer of our stock to any stockholder upon request and without charge. Written requests for such copies should be directed to Sage Therapeutics, Inc., 215 First Street, Cambridge, Massachusetts, 02142, Attention: Secretary, or by telephone request to (617) 299-8380. Our website is located at *http://www.sagerx.com*. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information on, or that can be accessed from, our website as part of this prospectus or any accompanying prospectus supplement.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference the information and reports we file with it, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is an important part of this prospectus, and information that we file after the date hereof with the SEC will automatically update and supersede the information already incorporated by reference. We are incorporating by reference the documents listed below, which we have already filed with the SEC, and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, except as to any portion of any future report or document that is not deemed filed under such provisions, after the date of this prospectus and prior to the termination of this offering:

- Annual Report on Form 10-K for the year ended December 31, 2014, as filed with the SEC on March 6, 2015, as amended on March 17, 2015 through filing of an Annual Report on Form 10-K/A with the SEC on such date;
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2014, as amended, from our definitive proxy statement on Schedule 14A (other than information furnished rather than filed), which was filed with the SEC on April 17, 2015;
- Quarterly Report on Form 10-Q filed with the SEC for the quarters ended March 31, 2015, June 30, 2015, and September 30, 2015, as filed with the SEC on May 15, 2015, August 12, 2015 (as amended on October 30, 2015 through filing of a Quarterly Report on Form 10-Q/A with the SEC on such date) and November 6, 2015, respectively;
- Current Reports on Form 8-K filed with the SEC on January 9, 2015, June 3, 2015, October 6, 2015, and December 16, 2015 (in each case, except for information contained therein which is furnished rather than filed); and
- The description of our common stock contained in our registration statement on Form 8-A, which was filed with the SEC on July 15, 2014, including any amendment or report filed for the purpose of updating such description.

Upon request, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered a copy of the documents incorporated by reference into this prospectus. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus, at no cost by writing or telephoning us at the following:

Sage Therapeutics, Inc., 215 First Street, Cambridge, Massachusetts, 02142, Attention: Secretary, (617) 299-8380.

You may also access these documents, free of charge on the SEC's website at *www.sec.gov* or on our website at *www.sagerx.com*. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information on, or that can be accessed from, our website as part of this prospectus or any accompanying prospectus supplement.

This prospectus is part of a registration statement we filed with the SEC. We have incorporated exhibits into this registration statement. You should read the exhibits carefully for provisions that may be important to you.

Neither we nor any selling stockholder have authorized anyone to provide you with information other than what is incorporated by reference or provided in this prospectus or any prospectus supplement. Neither we nor any selling stockholder are making an offer of these securities in any state where such offer is not permitted. You should not assume that the information in this prospectus or in the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus or those documents.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, contains forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as “may”, “will”, “could”, “should”, “expects”, “intends”, “plans”, “anticipates”, “believes”, “estimates”, “predicts”, “projects”, “potential”, “continue”, and similar expressions, or the negative of these terms, or similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties which could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus, and in particular those factors referenced in the section “Risk Factors.”

This prospectus, including the sections entitled “About this Prospectus” and “Risk Factors,” contains forward-looking statements that are based on our management’s belief and assumptions and on information currently available to our management. These statements relate to future events or our future financial performance, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the accuracy of our estimates regarding expenses, the potential for future revenues and capital requirements;
- our plans to develop and commercialize our product candidates, initially as treatments for super-refractory status epilepticus, status epilepticus, refractory status epilepticus, essential tremor, postpartum depression, or PPD, Smith-Lemli-Opitz and anti-NMDA receptor encephalitis, and possibly other central nervous system disorders;
- our ability to complete, within expected time frames, our ongoing non-clinical studies and clinical trials and to advance our product candidates into additional clinical trials, including pivotal clinical trials, and successfully complete such clinical trials;
- our plans with respect to filing for regulatory approval for our product candidates if development is successful, and the potential to obtain such approval and to commercialize our products, if approval is obtained; and
- the level of expenses we may incur in connection with our activities, and our ability to obtain additional financing when needed.

These forward-looking statements are neither promises nor guarantees of future performance, and are subject to a variety of risks and uncertainties, many of which are beyond our control, which could cause actual results to differ materially from those indicated by these forward-looking statements, including, without limitation: the possibility that we may experience slower than expected clinical site initiation or slower than expected identification and enrollment of evaluable patients; the potential for delays or problems in analyzing data or the need for additional analysis, data or patients; the potential that future pre-clinical and clinical results may not support further development of our product candidates; the potential for unexpected adverse events in the conduct of one of our clinical trials to impact our ability to continue the clinical trial or further development of a product candidate; the risk that we may encounter other unexpected hurdles or issues in the development and manufacture of our product candidates that may impact our timing or progress, as well as those risks more fully discussed in the “Risk Factors” section and under the sections of any accompanying prospectus supplement

entitled “Risk Factors” and the risk factors and cautionary statements described in other documents that we file from time to time with the SEC, specifically under “Item 1A: Risk Factors” and elsewhere in our most recent Annual Report on Form 10-K, as amended, for the period ending December 31, 2014, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K.

Given these uncertainties, readers should not place undue reliance on our forward-looking statements. These forward-looking statements speak only as of the date on which the statements were made and are not guarantees of future performance. Except as may be required by applicable law, we do not undertake to update any forward-looking statements after the date of this prospectus supplement or the respective dates of documents incorporated by reference herein or therein that include forward-looking statements.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks described in the documents incorporated by reference in this prospectus and any prospectus supplement, as well as other information we include or incorporate by reference into this prospectus and any applicable prospectus supplement, before making an investment decision. Our business, financial condition or results of operations could be materially adversely affected by the materialization of any of these risks. The trading price of our securities could decline due to the materialization of any of these risks, and you may lose all or part of your investment. This prospectus and the documents incorporated herein by reference also contain forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks described in the documents incorporated herein by reference, including (i) our most recent Annual Report on Form 10-K for the year ended December 31, 2014, as amended, which is on file with the SEC and is incorporated by reference into this prospectus, (ii) our most recent quarterly report on Form 10-Q for the quarterly period ended September 30, 2015, which is on file with the SEC and is incorporated by reference into this prospectus, and (iii) other documents we file with the SEC that are deemed incorporated by reference into this prospectus.

ABOUT THE COMPANY

We are a biopharmaceutical company committed to developing and commercializing novel medicines to treat life-threatening central nervous system, or CNS, disorders, where there are inadequate or no approved existing therapies. We are targeting CNS indications where patient populations are easily identified, clinical endpoints are well-defined and development pathways are feasible. Our lead product candidates are aimed at treating different stages of status epilepticus, or SE, a life-threatening condition in which the brain is in a state of persistent seizure, and other $GABA_A$ and NMDA dysfunction-related disorders.

We were incorporated under the laws of the state of Delaware in April 2010. Our principal executive office is located at 215 First Street, Cambridge, Massachusetts, 02142, and our telephone number is (617) 299-8380. Our website address is www.sagerx.com. The information on, or that can be accessed through, our website does not constitute part of this prospectus, and you should not rely on any such information in making the decision whether to purchase our common stock. Our common stock trades on The NASDAQ Global Market under the symbol “SAGE”.

DESCRIPTION OF SECURITIES

We and/or any selling stockholder may offer shares of our common stock and preferred stock, various series of warrants to purchase common stock or preferred stock, debt securities, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt, or any combination thereof from time to time in one or more offerings under this prospectus at prices and on terms to be determined at the time of any offering. This prospectus provides you with a general description of the securities we and/or any selling stockholder may offer. Each time we and/or any selling stockholder offer a type or series of securities under this prospectus, we will provide a prospectus supplement and/or free writing prospectus that will describe the specific amounts, prices and other important terms of the securities.

Common Stock. We and/or any selling stockholder may issue and/or sell, as applicable, shares of our common stock from time to time. Holders of shares of our common stock are entitled to one vote for each share held of record on all matters to be voted on by stockholders and do not have cumulative voting rights. Subject to the preferences that may be applicable to any then outstanding preferred stock, the holders of our outstanding shares of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Our board of directors will determine the rights, preferences and privileges of the shares of each wholly unissued series, and any qualifications, limitations or restrictions thereon, including dividend rights, conversion rights, preemptive rights, terms of redemption or repurchase, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series. Convertible preferred stock will be convertible into our common stock or exchangeable for other securities. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates.

If we sell any series of preferred stock under this prospectus, we will fix the rights, preferences and privileges of the preferred stock of such series, as well as any qualifications, limitations or restrictions thereon, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. We urge you to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Warrants. We may issue warrants for the purchase of common stock and/or preferred stock in one or more series. We may issue warrants independently or together with common stock and/or preferred stock, and the warrants may be attached to or separate from these securities. We urge you to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the particular series of warrants being offered, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants. Forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

We will evidence each series of warrants by warrant certificates that we will issue. Warrants may be issued under an applicable warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if applicable, in the prospectus supplement relating to the particular series of warrants being offered.

Units. We may issue, in one or more series, units consisting of common stock, preferred stock, and/or warrants for the purchase of common stock and/or preferred stock in any combination. We urge you to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreement that contains the terms of the units. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of unit agreement and any supplemental agreements that describe the terms of the series of units we are offering before the issuance of the related series of units.

We will evidence each series of units by unit certificates that we will issue. Units may be issued under a unit agreement that we enter into with a unit agent. We will indicate the name and address of the unit agent, if applicable, in the prospectus supplement relating to the particular series of units being offered.

Debt Securities. We may issue debt securities, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. The features of any debt securities we issue will be described in a prospectus supplement. We urge you, however, to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the particular series of debt securities being offered, as well as the complete indenture that contains the terms of the debt securities. We will file as exhibits to the registration statement of which this prospectus is a part, any supplemental agreements that describe the terms of the series of debt securities we are offering before the issuance of the related series of debt securities.

We may evidence each series of debt securities we will issue by an indenture that we enter into with a trustee. We will indicate the name and address of the trustee, if applicable, in the prospectus supplement relating to the particular series of debt securities being offered.

RATIO OF EARNINGS TO FIXED CHARGES

The following table sets forth our ratio of earnings to fixed charges for the periods shown. You should read this table in conjunction with the consolidated financial statements and notes incorporated by reference in this prospectus. We have no shares of preferred stock outstanding as of September 30, 2015, and paid no dividends on shares of preferred stock during the periods indicated. Therefore, the ratios of earnings to combined fixed charges and preferred dividends are the same as the ratios of earnings to fixed charges presented below. See Exhibit 12.1 hereto for additional details regarding the computation of the deficiency of earnings available to cover combined fixed charges and preferred dividends.

	Years Ended December 31,			Nine Months Ended September 30,
	2012	2013	2014	2015
Deficiency of Earnings Available to Cover Combined Fixed Charges and Preferred Dividends[1]	(9.6)	(18.3)	(36.1)	(65.9)

For purposes of calculating the ratios in the table above, earnings consist of net loss before income taxes. Fixed charges include interest expense on indebtedness and an estimate of the interest expense within rental expense.

We did not record earnings for any of the years ended December 31, 2014, 2013 and 2012 or the nine months ended September 30, 2015. Accordingly, our earnings were insufficient to cover fixed charges for such periods and we are unable to disclose a ratio of earnings to fixed charges for such periods. The dollar amount of the deficiency in earnings available for fixed charges for the years ended December 31, 2014, 2013 and 2012 and the nine months ended September 30, 2015 was approximately $36.1 million, $18.3 million, $9.6 million and $65.9 million, respectively.

(1) The deficiency of earnings available to cover combined fixed charges and preferred dividends includes non-cash deemed dividends to preferred stockholders and the accretion of redemption value of redeemable convertible preferred stock of $4,000, $7,000 and $2.3 million for the years ended December 31, 2012, 2013 and 2014, respectively.

USE OF PROCEEDS

Except as described in any prospectus supplement or in any related free writing prospectus that we may authorize to be provided to you, the net proceeds received by us from our sale of the securities described in this prospectus will be added to our general funds and will be used for our general corporate purposes. From time to time, we may engage in additional public or private financings of a character and amount which we may deem appropriate. Unless otherwise set forth in a prospectus supplement, we will not receive any proceeds from the sale of securities by any selling stockholder.

SELLING STOCKHOLDERS

Selling stockholders are persons or entities that, directly or indirectly, have acquired or will from time to time acquire from us, our securities. Such selling stockholders may be parties to registration rights agreements with us, or we otherwise may have agreed or will agree to register their securities for resale. The initial purchasers of our securities, as well as their transferees, pledges, donees or successors, all of whom we refer to as "selling stockholders," may from time to time offer and sell our securities pursuant to this prospectus and any applicable prospectus supplement.

The applicable prospectus supplement will set forth the name of each of the selling stockholders and the number of securities beneficially owned by such selling stockholder that are covered by such prospectus supplement. The applicable prospectus supplement will also disclose whether any of the selling stockholders has held any position or office with, has been employed by or otherwise has had a material relationship with us during the three years prior to the date of the applicable prospectus supplement.

PLAN OF DISTRIBUTION

We and/or any selling stockholder may sell our securities from time to time in one or more transactions. We and/or any selling stockholder may sell our securities to or through agents, underwriters, dealers, remarketing firms or other third parties or directly to one or more purchasers or through a combination of any of these methods. In some cases, we and/or any selling stockholder or dealers acting with us and/or any selling stockholder or on behalf of us and/or any selling stockholder may also purchase our securities and reoffer them to the public. We and/or any selling stockholder may also offer and sell, or agree to deliver, our securities pursuant to, or in connection with, any option agreement or other contractual arrangement.

Agents whom we designate may solicit offers to purchase our securities.

- We and/or any selling stockholder will name any agent involved in offering or selling our securities, and disclose any commissions that we will pay to the agent, in the applicable prospectus supplement.
- Unless we and/or any selling stockholder indicate otherwise in the applicable prospectus supplement, agents will act on a best efforts basis for the period of their appointment.
- Agents may be deemed to be underwriters under the Securities Act, of any of our securities that they offer or sell.

We and/or any selling stockholder may use an underwriter or underwriters in the offer or sale of our securities.

- If we and/or any selling stockholder use an underwriter or underwriters, we will execute an underwriting agreement with the underwriter or underwriters at the time that we reach an agreement for the sale of our securities.
- We and/or any selling stockholder will include the names of the specific managing underwriter or underwriters, as well as the names of any other underwriters, and the terms of the transactions, including the compensation the underwriters and dealers will receive, in the applicable prospectus supplement.
- The underwriters will use the applicable prospectus supplement, together with the prospectus, to sell our securities.

We may use a dealer to sell our securities.

- If we and/or any selling stockholder use a dealer, we will sell our securities to the dealer, as principal.
- The dealer will then sell our securities to the public at varying prices that the dealer will determine at the time it sells our securities.
- We and/or any selling stockholder will include the name of the dealer and the terms of the transactions with the dealer in the applicable prospectus supplement.

We and/or any selling stockholder may solicit directly offers to purchase our securities, and we may directly sell our securities to institutional or other investors. We and/or any selling stockholder will describe the terms of direct sales in the applicable prospectus supplement.

We and/or any selling stockholder may engage in at-the-market offerings into an existing trading market in accordance with Rule 415(a)(4) of the Securities Act.

We and/or any selling stockholder will indemnify agents, underwriters and dealers against certain liabilities, including liabilities under the Securities Act. Agents, underwriters and dealers, or their affiliates, may be customers of, engage in transactions with or perform services for us or our respective affiliates, in the ordinary course of business.

We and/or any selling stockholder may authorize agents and underwriters to solicit offers by certain institutions to purchase our securities at the public offering price under delayed delivery contracts.

- If we and/or any selling stockholder use delayed delivery contracts, we will disclose that we are using them in the prospectus supplement and will tell you when we will demand payment and when delivery of our securities will be made under the delayed delivery contracts.
- These delayed delivery contracts will be subject only to the conditions that we describe in the prospectus supplement.
- We and/or any selling stockholder will describe in the applicable prospectus supplement the commission that underwriters and agents soliciting purchases of our securities under delayed delivery contracts will be entitled to receive.

Unless otherwise specified in connection with a particular underwritten offering of our securities, the underwriters will not be obligated to purchase offered securities unless specified conditions are satisfied, and if the underwriters do purchase any offered securities, they will purchase all offered securities.

In connection with underwritten offerings of the offered securities and in accordance with applicable law and industry practice, the underwriters in certain circumstances are permitted to engage in certain transactions that stabilize the price of our securities. Such transactions consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of our securities. If the underwriters create a short position in our securities in connection with the offering (i.e., if they sell more securities than are set forth on the cover page of the applicable prospectus supplement), the underwriters may reduce that short position by purchasing our securities in the open market or as otherwise provided in the applicable prospectus supplement. The underwriters may also impose a penalty bid, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if the securities sold by them are repurchased in connection with stabilization transactions. In general, purchases of a security for the purpose of stabilization or to reduce a short position could cause the price of the security to be higher than it might be in the absence of such purchases. The imposition of a penalty bid might also have an effect on the price of our securities to the extent that it were to discourage resales of our securities. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We and/or any selling stockholder may effect sales of securities in connection with forward sale, option or other types of agreements with third parties. Any distribution of securities pursuant to any forward sale agreement may be effected from time to time in one or more transactions that may take place through a stock exchange, including block trades or ordinary broker’s transactions, or through broker-dealers acting either as principal or agent, or through privately-negotiated transactions, or through an underwritten public offering, or through a combination of any such methods of sale, at market prices prevailing at the time of sale, prices relating to such prevailing market prices or at negotiated or fixed prices.

The specific terms of the lock-up provisions, if any, in respect of any given offering will be described in the applicable prospectus supplement.

In compliance with the guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8.0% of the aggregate amount of the securities offered by this prospectus.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon by Goodwin Procter LLP, Boston, Massachusetts.

EXPERTS

The financial statements incorporated in this Prospectus by reference to the Annual Report on Form 10-K, as amended, for the year ended December 31, 2014 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

$575,000,000

Sage Therapeutics, Inc.

Common stock

Prospectus supplement

J.P. Morgan **Goldman Sachs & Co. LLC** **Morgan Stanley**

, 2018