Biogen and Sage Therapeutics Announce Global Collaboration to Develop and Commercialize Potential Breakthrough Therapies in Depression and Movement Disorders

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- *Biogen and Sage enter into an agreement to jointly develop and commercialize zuranolone and SAGE-324 in the U.S.*
- *Biogen to receive exclusive license to develop and commercialize zuranolone and SAGE-324 outside of the U.S., excluding rights to zuranolone in Japan, Taiwan and South Korea*
- *Sage Therapeutics to receive $1.525 billion in cash comprised of an upfront payment of $875 million and a $650 million equity investment as well as potential milestone payments, profit sharing and royalties*
- *Sage to host conference call Monday, November 30 at 8:00 a.m. ET*
- *Biogen to host conference call Monday, November 30 at 9:00 a.m. ET*

CAMBRIDGE, Mass., Nov. 27, 2020 (GLOBE NEWSWIRE) -- Biogen Inc. (Nasdaq: BIIB) and Sage Therapeutics, Inc. (Nasdaq: SAGE) announced that they have executed a global collaboration and license agreement to jointly develop and commercialize zuranolone (SAGE-217) for major depressive disorder (MDD), postpartum depression (PPD) and other psychiatric disorders and SAGE-324 for essential tremor and other neurological disorders.

“We are excited about the potential to bring together Biogen’s leading capabilities in neuroscience with Sage’s deep expertise in psychiatry,” said Michel Vounatsos, Biogen’s Chief Executive Officer. “Major depressive disorder affects approximately 17 million people in the U.S. alone, and is a common co-morbidity of multiple neurological disorders in Biogen’s core therapeutic areas. There is a tremendous unmet medical need in depression, and we are optimistic about the potential for zuranolone to help transform the treatment of depression and address the stigma often associated with chronic use of antidepressants.”

“With the recent and pending data outputs for zuranolone and SAGE-324, the timing is right for a collaboration between two like-minded companies committed to patients and driven by a passion for neuroscience and brain health,” said Mike Cloonan, Chief Operating Officer at Sage Therapeutics. “Through this collaboration, Sage and Biogen have the potential to build something greater together than either could have done alone. We will leverage each other’s existing expertise while continuing to build new capabilities in our efforts to create paradigm shifts in the treatment of depression, PPD and essential tremor -- disorders that have gone too long with few treatment innovations. Additionally, the cash from the collaboration is expected to enable Sage to accelerate and expand value potential for its pipeline and will enhance Sage’s strategic, financial and operational flexibility as well as strengthening our multi-franchise approach.”

Zuranolone, a potential first-in-class, two-week, once-daily oral therapy in development for the treatment of MDD and PPD, is currently in Phase 3 development as part of the LANDSCAPE and NEST clinical programs. Zuranolone has breakthrough therapy designation from the U.S. Food and Drug Administration (FDA) for MDD and, if successfully developed and approved, has the potential to be a novel treatment paradigm in depression.

The vision for zuranolone in MDD and PPD is based on its potential, being evaluated in the LANDSCAPE and NEST development programs, to work rapidly and to continue providing sustained benefit beyond the period of dosing. Together, these two features, if supported by positive clinical efficacy and safety data, could provide an alternative option to how depression is treated today based on a target profile of an “as-needed” short course of treatment for a depressive episode, with rapid and sustained efficacy and favorable tolerability. The development of an “as-needed” treatment for depression may help ease the difficulties associated with chronic use of antidepressants and may enhance quality of life and patient adherence.

An estimated 17 million Americans experience symptoms of MDD each year. Additionally, a September 2020 *Journal of the American Medical Association* article found that, in the U.S., depression symptoms are more than three times higher during the COVID-19 pandemic than before. MDD is one of the largest contributors to disability in the U.S. and worldwide.

Postpartum depression is a major depressive episode that can occur during pregnancy or postpartum and is one of the most common medical complications during and after pregnancy. In the U.S., an estimated 1 in 8 mothers experience symptoms of PPD which equates to approximately 500,000 annual cases.

If approved, zuranolone would also be highly complementary to several of Biogen’s therapeutic areas of focus, including multiple sclerosis (MS), Alzheimer’s disease (AD), spinal muscular atrophy (SMA), amyotrophic lateral sclerosis (ALS) and Parkinson’s disease (PD). Depression is a common co-morbidity in patients with these neurological disorders and their caregivers. Biogen estimates that ~ 50 percent of patients with MS, ~ 40 percent of patients with AD, ~ 50 percent of patients with PD, ~ 30 percent of patients with ALS and ~ 60 percent of SMA caregivers experience depression. In addition, many patients with AD see psychiatrists as part of their diagnostic and/or treatment journey.

Zuranolone is a next-generation positive allosteric modulator of the gamma-aminobutyric acid ($GABA_A$) receptor. The $GABA_A$ system is the major inhibitory signaling pathway of the brain and central nervous system (CNS), and contributes significantly to regulating CNS function. This mechanism of action is a novel approach that may enable a new class of antidepressants.

To date, two positive pivotal studies have been completed with zuranolone 30 mg, one in MDD (MDD-201) and one in PPD (ROBIN Study). Additionally, while the Phase 3 MOUNTAIN Study of zuranolone in MDD did not meet its primary endpoint, the encouraging data from the recently announced MOUNTAIN six-month follow-up period and the topline interim SHORELINE Study analysis, suggest the potential for zuranolone, if successfully developed and approved, to be uniquely positioned as a disruptive, distinct and novel treatment approach for patients. Biogen and Sage believe that zuranolone is clinically active in MDD based on the data compiled to date and look forward to planned data readouts in 2021.

Sage is pursuing three development pathways for zuranolone in the U.S.: PPD; acute rapid response therapy (RRT) in MDD when co-initiated with new standard antidepressant therapy; and “as-needed,” or episodic, treatment of MDD. As a result, Sage is advancing four additional pivotal studies evaluating a 50 mg dose of zuranolone: a Phase 3 study in PPD (SKYLARK, PPD-301), a Phase 3 study of use as an acute RRT in patients with MDD when co-initiated with new standard antidepressant therapy (CORAL, MDD-305), a Phase 3 study in the acute treatment of MDD (WATERFALL, MDD-301B) and an open label Phase 3 study evaluating the long-term safety, tolerability and efficacy of “as-needed” repeat treatment (SHORELINE,

MDD-303). Data from these studies are expected in 2021.

Upon closing of the transaction, Biogen and Sage will collaborate to further define the development and commercialization strategy for zuranolone. Beyond PPD and MDD, zuranolone may also have potential in other psychiatric disorders including bipolar disorder and generalized anxiety disorder.

SAGE-324 is a next-generation positive allosteric modulator of $GABA_A$ receptors in Phase 2 development for essential tremor with potential in other neurological conditions such as epilepsy and PD. Essential tremor is one of the most common movement disorders estimated to affect over six million patients in the U.S., and current standard of care may be inadequate for many. Following encouraging results from a Phase 1 open-label study in essential tremor, Sage advanced SAGE-324 to the Phase 2a KINETIC Study, which Sage is currently conducting. The KINETIC Study is a 28-day placebo-controlled study in patients with essential tremor expected to read out in 2021. Upon closing of the transaction, Biogen and Sage will collaborate to further define the development and commercialization strategy for SAGE-324 in essential tremor and, as appropriate, for potential expansion into other neurological disorders.

Terms of the Collaboration
The strategic collaboration is global in scope and under the terms of the agreement, Sage will receive $1.525 billion in cash to be comprised of an upfront payment of $875 million and a $650 million equity investment in Sage from the purchase of approximately 6.2 million newly issued shares of Sage common stock at a price of $104.14 per share, representing a premium of 40 percent over the 30-day volume-weighted average share price of $74.39 per share as of November 25, 2020.

Should the zuranolone and SAGE-324 programs achieve certain development and commercial milestones, Sage will be eligible to receive up to approximately $1.6 billion in potential milestone payments.

Biogen and Sage will share responsibility and costs for development as well as profits and losses for commercialization in the U.S. (50 percent Biogen; 50 percent Sage). Outside the U.S., Biogen will be responsible for development and commercialization, excluding Japan, Taiwan and South Korea with respect to zuranolone, and will pay Sage tiered royalties in the high teens to low twenties.

Closing of the transaction is contingent on completion of review under antitrust laws, including the Hart-Scott-Rodino (HSR) Antitrust Improvements Act of 1976 in the U.S., and other customary closing conditions. The transaction is expected to close by the end of January 2021.

BofA Securities and Guggenheim Securities acted as financial advisors to Biogen. Goldman Sachs & Co. LLC is acting as the exclusive financial advisor to Sage.

Conference Call Information
Sage will host a conference call to discuss the collaboration Monday, November 30 at 8:00 a.m. ET. The live webcast can be accessed on the investor page of Sage's website at investor.sagerx.com. A replay of the webcast will be available on Sage's website approximately two hours after the completion of the event and will be archived for up to 30 days.

On Monday, November 30 at 9:00 a.m. ET, Biogen will host a live conference call to discuss the collaboration, which will be accessible through the Investors section of Biogen's website, www.biogen.com.

About Biogen
At Biogen, our mission is clear: we are pioneers in neuroscience. Biogen discovers, develops and delivers worldwide innovative therapies for people living with serious neurological and neurodegenerative diseases as well as related therapeutic adjacencies. One of the world's first global biotechnology companies, Biogen was founded in 1978 by Charles Weissmann, Heinz Schaller, Kenneth Murray and Nobel Prize winners Walter Gilbert and Phillip Sharp. Today Biogen has the leading portfolio of medicines to treat multiple sclerosis, has introduced the first approved treatment for spinal muscular atrophy, commercializes biosimilars of advanced biologics and is focused on advancing research programs in multiple sclerosis and neuroimmunology, Alzheimer's disease and dementia, neuromuscular disorders, movement disorders, ophthalmology, immunology, neurocognitive disorders, acute neurology and pain.

We routinely post information that may be important to investors on our website at www.biogen.com. Follow us on social media – Twitter, LinkedIn, Facebook, YouTube.

About Sage Therapeutics
Sage Therapeutics is a biopharmaceutical company committed to developing novel therapies with the potential to transform the lives of people with debilitating disorders of the brain. We are pursuing new pathways with the goal of improving brain health, and our depression, neurology and neuropsychiatry franchise programs aim to change how brain disorders are thought about and treated. Our mission is to make medicines that matter so people can get better, sooner. For more information, please visit www.sagerx.com.

Biogen Safe Harbor
This news release contains forward-looking statements, made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including statements relating to the potential benefits and results that may be achieved through Biogen's proposed collaboration with Sage; the anticipated completion and timing of the proposed transaction; the potential benefits, safety and efficacy of zuranolone and SAGE-324; the clinical development program and data readouts for zuranolone and SAGE-324; the potential treatment of depression, including MDD and PPD, essential tremor and other neurological disorders; the potential of Biogen's commercial business and pipeline programs; Biogen's strategy and plans; risks and uncertainties associated with drug development and commercialization; and Biogen's future financial and operating results. These forward-looking statements may be accompanied by words such as "aim," "anticipate," "believe," "could," "estimate," "expect," "forecast," "goal," "intend," "may," "plan," "potential," "possible," "will," "would" and other words and terms of similar meaning. Drug development and commercialization involve a high degree of risk, and only a small number of research and development programs result in commercialization of a product. Results in early stage clinical trials may not be indicative of full results or results from later stage or larger scale clinical trials and do not ensure regulatory approval. You should not place undue reliance on these statements or the scientific data presented.

These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements, including, without limitation: risks that the proposed transaction will not be completed in a timely manner or at all; the possibility that certain closing conditions to the proposed transaction will not be satisfied; uncertainty as to whether the anticipated benefits of the proposed collaboration can be achieved; risks of unexpected hurdles, costs or delays; uncertainty of success in the development and potential commercialization of zuranolone and SAGE-324, which may be impacted by, among other things, unexpected concerns that may arise from additional data or analysis, the occurrence of adverse safety events, failure to obtain regulatory approvals in certain jurisdictions, failure to protect and enforce data, intellectual property and other proprietary rights and uncertainties relating to intellectual property claims and challenges; product liability claims; third party collaboration risks; and the direct and indirect impacts of the ongoing COVID-19 pandemic on Biogen's business, results of operations and financial condition. The foregoing sets forth many, but not all, of the factors that could cause actual results to differ from Biogen's expectations in any forward-looking statement. Investors should consider this cautionary statement as well as the risks factors identified in Biogen's most recent annual or quarterly report and in other reports Biogen has filed with the U.S. Securities and Exchange Commission. These statements are based on Biogen's current beliefs and expectations and speak

only as of the date of this news release. Biogen does not undertake any obligation to publicly update any forward-looking statements, whether as a result of new information, future developments or otherwise.

Sage Therapeutics Safe Harbor

This news release contains forward-looking statements, made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including statements relating to: the potential benefits and results that may be achieved through Sage's proposed collaboration with Biogen; the anticipated completion of the proposed transaction; the anticipated payments that may be received if all milestones under the agreement with Biogen are met; the potential benefits, safety and efficacy of zuranolone and SAGE-324, and the potential of the product candidates, if successful, to change the way certain diseases and disorders are treated; the planned clinical development program and expected timing of data readouts for zuranolone and SAGE-324; the potential for successful development and approval of zuranolone and SAGE-324 and the potential for future commercialization; estimates as to the number of patients with MDD, PPD and essential tremor; and the goals, opportunity and potential for Sage's business. 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 Sage's control, which could cause actual results to differ materially from those contemplated in these forward-looking statements, including the risks that: the proposed transaction may not be completed in a timely manner or at all; certain closing conditions to the proposed transaction may not be satisfied; the anticipated benefits of the proposed collaboration may never be achieved; results from interim data cuts from a clinical study may not be reflective of the results that will be achieved in the full study once completed; success in non-clinical studies or in earlier clinical trials may not be repeated or observed in ongoing or future studies, and ongoing and future non-clinical and clinical results may not meet their primary or key secondary endpoints or be sufficient to file for or gain regulatory approval to market a product without further development work or may not support further development at all; adverse results may occur at any stage of development that negatively impact further development or that require additional nonclinical and clinical work which may not yield positive results; different or more severe adverse events may occur at the higher doses of zuranolone or SAGE-324 currently being studied; issues may arise with the efficacy or durability of short-term treatment, or co-initiated treatment with zuranolone or there may be safety and efficacy concerns with respect to retreatment with zuranolone or chronic treatment with SAGE-324 that require additional nonclinical studies or clinical trials be conducted; delays in initiation of dosing or conduct or completion of ongoing and planned clinical trials may occur that may impact expected timelines; COVID-19 may impact clinical development timelines; the FDA may ultimately decide that the design or results of completed and planned clinical trials for zuranolone or SAGE-324, even if positive, are not sufficient for regulatory approval in the indications that are the focus of our development plan; the actual size of the MDD, PPD and essential tremor patient populations may be significantly lower than estimates; Sage may not obtain the operational, strategic or financial flexibility or value creation opportunities it expects from the collaboration with Biogen; there may be other unexpected hurdles in the development and manufacture of zuranolone or SAGE-324 which may delay or impact planned activities or results; as well as those risks more fully discussed in the section entitled "Risk Factors" in Sage's most recent Quarterly Report on Form 10-Q, as well as discussions of potential risks, uncertainties, and other important factors in our subsequent filings with the Securities and Exchange Commission. In addition, any forward-looking statements represent Sage's views only as of today, and should not be relied upon as representing Sage's views as of any subsequent date. We explicitly disclaim any obligation to update any forward-looking statements.

BIOGEN MEDIA CONTACT:
David Caouette
Biogen Inc.
Tel: (781) 464-3260

BIOGEN INVESTOR CONTACT:
Joe Mara
Biogen Inc.
Tel: (781) 464-2442

SAGE MEDIA CONTACT:
Maureen L. Suda
Sage Therapeutics
Tel: (617) 949-4289
Email: Maureen.Suda@sagerx.com

SAGE INVESTOR CONTACT:
Jeff Boyle
Sage Therapeutics
Tel: (617) 949-4256
Email: Jeff.Boyle@sagerx.com