



## **Axsome Therapeutics Announces FDA Acceptance and Priority Review of New Drug Application for AXS-05 for Treatment of Major Depressive Disorder**

April 26, 2021

*FDA grants Priority Review and sets PDUFA action goal date of August 22, 2021*

NEW YORK, April 26, 2021 (GLOBE NEWSWIRE) -- Axsome Therapeutics, Inc. (NASDAQ: AXSM), a biopharmaceutical company developing novel therapies for the management of central nervous system (CNS) disorders, today announced that the U.S. Food and Drug Administration (FDA) has accepted for filing the Company's New Drug Application (NDA) for AXS-05 for the treatment of major depressive disorder (MDD), and has granted the application Priority Review. AXS-05 (dextromethorphan-bupropion) is a novel, oral, investigational NMDA receptor antagonist with multimodal activity.

Priority Review is granted by the FDA to applications for medicines that, if approved, would provide significant improvements in the effectiveness or safety of the treatment, diagnosis, or prevention of serious conditions when compared to standard applications. In general, the FDA's Priority Review designation accelerates the review time from 10 months to a goal of six months from the date of acceptance of the filing. The FDA has set a Prescription Drug User Fee Act (PDUFA) target action date for the AXS-05 NDA of August 22, 2021.

The FDA previously granted Breakthrough Therapy Designation for AXS-05 for the treatment of MDD in March 2019. The FDA also granted Breakthrough Therapy Designation for AXS-05, for a second indication, Alzheimer's disease agitation in June 2020.

"We are pleased with the FDA's acceptance and Priority Review designation of our NDA for AXS-05 in major depressive disorder, and we look forward to continuing to work closely with the FDA throughout the review process," said Herriot Tabuteau, MD, Chief Executive Officer of Axsome. "If approved, AXS-05 would be an important new treatment option for the many Americans living with depression."

The NDA is supported by results from two randomized, double-blind, controlled trials of AXS-05 in patients with a confirmed diagnosis of moderate to severe MDD, the GEMINI and ASCEND trials, which demonstrated statistically significant improvements in depressive symptoms with AXS-05 compared to placebo and active controls, respectively.

### **About Major Depressive Disorder (MDD)**

Major depressive disorder (MDD) is a debilitating, chronic, biologically-based disorder characterized by low mood, inability to feel pleasure, feelings of guilt and worthlessness, low energy, and other emotional and physical symptoms, and which impairs social, occupational, educational, or other important functioning. In severe cases, MDD can result in suicide. According to the National Institutes of Health, an estimated 7% of U.S. adults, or approximately 19 million, experience MDD each year<sup>1</sup>. According to the World Health Organization (WHO), depression is the leading cause of disability worldwide, and is a major contributor to the overall global burden of disease<sup>2</sup>. Nearly two-thirds of diagnosed and treated patients do not experience adequate treatment response with currently available first-line therapy<sup>3</sup>, highlighting the need for additional therapies with new mechanisms of action.

### **About AXS-05**

AXS-05 (dextromethorphan-bupropion) is a novel, oral, patent-protected, investigational NMDA receptor antagonist with multimodal activity under development for the treatment of major depressive disorder and other central nervous system (CNS) disorders. AXS-05 utilizes a proprietary formulation and dose of dextromethorphan and bupropion, and Axsome's metabolic inhibition technology, to modulate the delivery of the components. The dextromethorphan component of AXS-05 is an uncompetitive N-methyl-D-aspartate (NMDA) receptor antagonist, also known as a glutamate receptor modulator, which is a novel mechanism of action, meaning it works differently than currently approved therapies for major depressive disorder. The dextromethorphan component of AXS-05 is also a sigma-1 receptor agonist. The bupropion component of AXS-05 serves to increase the bioavailability of dextromethorphan, and is a norepinephrine and dopamine reuptake inhibitor. AXS-05 is currently covered by more than 100 issued U.S. and international patents, with expiration dates out to 2040. AXS-05 has been granted U.S. Food and Drug Administration (FDA) Breakthrough Therapy designations for the treatment of MDD and for treatment of Alzheimer's disease agitation. AXS-05 is not approved by the FDA.

### **About Axsome Therapeutics, Inc.**

Axsome Therapeutics, Inc. is a biopharmaceutical company developing novel therapies for the management of central nervous system (CNS) disorders for which there are limited treatment options. For the many people facing unsatisfactory treatments for CNS disorders, Axsome accelerates the invention and adoption of life-changing medicines. Axsome's core CNS product candidate portfolio includes five clinical-stage candidates, AXS-05, AXS-07, AXS-09, AXS-12, and AXS-14. AXS-05 is being developed for major depressive disorder (MDD), Alzheimer's disease (AD) agitation, and as a treatment for smoking cessation. AXS-07 is being developed for the acute treatment of migraine. AXS-12 is being developed for the treatment of narcolepsy. AXS-14 is being developed for fibromyalgia. AXS-05, AXS-07, AXS-09, AXS-12, and AXS-14 are investigational drug products not approved by the FDA. For more information, please visit the Company's website at [axsome.com](https://axsome.com). The Company may occasionally disseminate material, nonpublic information on the company website.

## References

1. Substance Abuse and Mental Health Services Administration. (2020). Results from the 2019 National Survey on Drug Use and Health. Retrieved from <https://www.samhsa.gov/data/>.
2. World Health Organization. Fact Sheets: Depression.
3. Rush AJ, et al. (2007) Am J. Psychiatry 163:11, pp. 1905-1917 (STAR\*D Study).

## Forward Looking Statements

Certain matters discussed in this press release are “forward-looking statements”. We may, in some cases, use terms such as “predicts,” “believes,” “potential,” “continue,” “estimates,” “anticipates,” “expects,” “plans,” “intends,” “may,” “could,” “might,” “will,” “should” or other words that convey uncertainty of future events or outcomes to identify these forward-looking statements. In particular, the Company’s statements regarding trends and potential future results are examples of such forward-looking statements. The forward-looking statements include risks and uncertainties, including, but not limited to, the success, timing and cost of our ongoing clinical trials and anticipated clinical trials for our current product candidates, including statements regarding the timing of initiation, pace of enrollment and completion of the trials (including our ability to fully fund our disclosed clinical trials, which assumes no material changes to our currently projected expenses), futility analyses and receipt of interim results, which are not necessarily indicative of the final results of our ongoing clinical trials, and the number or type of studies or nature of results necessary to support the filing of a new drug application (“NDA”) for any of our current product candidates; our ability to fund additional clinical trials to continue the advancement of our product candidates; the timing of and our ability to obtain and maintain U.S. Food and Drug Administration (“FDA”) or other regulatory authority approval of, or other action with respect to, our product candidates (including, but not limited to, whether potential filing issues or issues identified by FDA during the substantive review may impact the potential approvability of the Company’s NDA submission for AXS-05 in MDD or the timing of such approval, and whether the FDA will agree with the Company’s discontinuation of the bupropion treatment arm of the ADVANCE study in accordance with the independent data monitoring committee’s recommendations); the successful submission of and approval by the FDA of an NDA for AXS-07 for the acute treatment of migraine in adults with or without aura, pursuant to our special protocol assessment for the MOMENTUM clinical trial; the potential for the ASCEND clinical trial, combined with the GEMINI clinical trial results, to provide a basis for approval of AXS-05 for the treatment of major depressive disorder and accelerate its development timeline and commercial path to patients; the Company’s ability to successfully defend its intellectual property or obtain the necessary licenses at a cost acceptable to the Company, if at all; the successful implementation of the Company’s research and development programs and collaborations; the success of the Company’s license agreements; the acceptance by the market of the Company’s product candidates, if approved; the Company’s anticipated capital requirements, including the amount of capital required for the Company’s commercial launch of its product candidates, and the potential impact on the Company’s anticipated cash runway; as well as unforeseen circumstances or other disruptions to normal business operations arising from or related to COVID-19; and other factors, including general economic conditions and regulatory developments, not within the Company’s control. The factors discussed herein could cause actual results and developments to be materially different from those expressed in or implied by such statements. The forward-looking statements are made only as of the date of this press release and the Company undertakes no obligation to publicly update such forward-looking statements to reflect subsequent events or circumstance.

### Axsome Contact:

Mark Jacobson  
Chief Operating Officer  
Axsome Therapeutics, Inc.  
22 Cortlandt Street, 16<sup>th</sup> Floor  
New York, NY 10007  
Tel: 212-332-3243  
Email: [mjacobson@axsome.com](mailto:mjacobson@axsome.com)  
[www.axsome.com](http://www.axsome.com)



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