

July 25, 2023



## **Avenue Therapeutics Announces Agreement with the FDA on the Study Design and Analysis Approach of the Phase 3 Safety Study for IV Tramadol**

MIAMI, July 25, 2023 (GLOBE NEWSWIRE) -- Avenue Therapeutics, Inc. (Nasdaq: ATXI) ("Avenue" or the "Company"), a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of neurologic diseases, today announced that it has reached agreement with the U.S. Food and Drug Administration ("FDA") on key elements of the Phase 3 safety study, including the primary endpoint and statistical analysis approach, for intravenous (IV) tramadol, which is in development for the treatment of acute post-operative pain in a medically supervised setting. The agreed upon non-inferiority study is designed to assess the theoretical risk of opioid-induced respiratory depression related to opioid stacking on IV tramadol compared to IV morphine.

The study will randomize post bunionectomy patients to IV tramadol or IV morphine for pain relief administered during a 48-hour post-operative period. Of note, IV tramadol demonstrated safety and efficacy in this same surgical model in a Phase 3 efficacy trial. Patients will have access to IV hydromorphone, a Schedule II opioid, for rescue of breakthrough pain. The primary endpoint is a composite of elements indicative of respiratory depression.

"Based on IV tramadol's innovative mixed modality mechanism of action (agonism at the opioid mu receptor and reuptake inhibitor of serotonin and norepinephrine), decades of clinical experience in Europe and around the world, as well as the program's positive data in two Phase 3 trials, we believe that IV tramadol will prove to be safe and effective in this final study and patient population," said Alexandra MacLean, M.D., Chief Executive Officer of Avenue. "With over 100 million acute pain cases in the U.S. reported annually, patients and physicians seek an alternative pain management option with the potential to reduce the use of conventional opioids and the associated abuse potential in the post-operative setting, while effectively managing patient's pain. We are confident that IV tramadol has the potential to overcome limitations of existing therapies and make a meaningful difference in the U.S. pain treatment landscape."

Avenue is submitting the revised protocol to the FDA including the statistical plan, which reflects the now agreed upon study design, for final review. "Our goal is to initiate the Phase 3 safety study this year, subject to obtaining the necessary financing which could be

provided through a strategic partnership, and we expect that a positive study outcome could result in the FDA approval of IV tramadol. Additionally, we plan to provide updates on Avenue's two earlier-stage clinical programs in the coming weeks, including our lead product candidate, AJ201 to treat spinal and bulbar muscular atrophy, and BAER101 for epilepsy. We remain committed to Avenue's mission of delivering impactful therapies to treat patients with neurologic diseases, while building shareholder value," said Dr. MacLean.

### **About Avenue Therapeutics**

Avenue Therapeutics, Inc. (Nasdaq: ATXI) is a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of neurologic diseases. It is currently developing three assets including AJ201, a first-in-class asset for spinal and bulbar muscular atrophy, BAER101, an oral small molecule selective GABA-A  $\alpha$ 2/3 receptor positive allosteric modulator for CNS diseases, and IV tramadol, which is in Phase 3 clinical development for the management of acute postoperative pain in adults in a medically supervised healthcare setting. Avenue is headquartered in Miami, FL and was founded by Fortress Biotech, Inc. (Nasdaq: FBIO). For more information, visit [www.avenuetx.com](http://www.avenuetx.com).

### **Forward-Looking Statements**

This press release contains predictive or "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of current or historical fact contained in this press release, including statements that express our intentions, plans, objectives, beliefs, expectations, strategies, predictions or any other statements relating to our future activities or other future events or conditions are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "predict," "project," "will," "should," "would" and similar expressions are intended to identify forward-looking statements. These statements are based on current expectations, estimates and projections made by management about our business, our industry and other conditions affecting our financial condition, results of operations or business prospects. These statements are not guarantees of future performance and involve risks, uncertainties and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in, or implied by, the forward-looking statements due to numerous risks and uncertainties. Factors that could cause such outcomes and results to differ include, but are not limited to, risks and uncertainties arising from: expectations for increases or decreases in expenses; expectations for the clinical and pre-clinical development, manufacturing, regulatory approval, and commercialization of our pharmaceutical product candidate or any other products we may acquire or in-license; our use of clinical research centers and other contractors; expectations for incurring capital expenditures to expand our research and development and manufacturing capabilities; expectations for generating revenue or becoming profitable on a sustained basis; expectations or ability to enter into marketing and other partnership agreements; expectations or ability to enter into product acquisition and in-licensing transactions; expectations or ability to build our own commercial infrastructure to manufacture, market and sell our product candidates; acceptance of our products by doctors, patients or payors; our ability to compete against other companies and research institutions; our ability to secure adequate protection for our intellectual property; our ability to attract and retain key personnel; availability of reimbursement for our products; estimates of the sufficiency of our existing cash and cash equivalents and investments to finance our operating requirements, including expectations regarding the value and liquidity of our

investments; the volatility of our stock price; expected losses; expectations for future capital requirements; and those risks discussed in our filings which we make with the SEC. Any forward-looking statements speak only as of the date on which they are made, and we undertake no obligation to publicly update or revise any forward-looking statements to reflect events or circumstances that may arise after the date of this press release, except as required by applicable law. Investors should evaluate any statements made by us in light of these important factors.

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Source: Avenue Therapeutics