

**Titan Pharmaceuticals, Inc.**

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**FOR IMMEDIATE RELEASE****TITAN LAUNCHES RANDOMIZED STUDY OF  
SPHERAMINE® IN PARKINSON'S DISEASE**

**South San Francisco, CA – December 19, 2002** – Titan Pharmaceuticals, Inc. (ASE:TTP) today announced that it has initiated a multicenter, randomized, blinded, controlled study of Spheramine® in Parkinson's disease. The newly launched Phase II clinical study will enroll 68 patients with later-stage Parkinson's disease (Hoehn and Yahr Stages III and IV) to further evaluate the efficacy, safety, and tolerability of Spheramine, a novel cell therapy under development by Titan and Schering AG, Germany (FSE:SCH, NYSE:SHR), Titan's corporate partner for worldwide development and commercialization of Spheramine. Schering AG, Germany is fully funding the clinical development program of Spheramine.

Spheramine is a unique cell therapy product utilizing normal human cells attached to microcarriers that enable long-term survival and function of the cells. The particular cells used, called retinal pigment epithelial cells or RPE cells, produce L-DOPA and directly enhance brain levels of dopamine, a neurotransmitter that is deficient in certain brain regions in Parkinson's patients, leading to movement disorders. RPE cells can be grown in large numbers using cell culture manufacturing methods to produce many thousands of doses of Spheramine from a single starting tissue sample. Spheramine is injected into the brain regions lacking dopamine, using a surgical technique called stereotactic injection, which does not require general anesthesia.

Previous preclinical studies have demonstrated the preliminary efficacy and safety of Spheramine, including blinded studies in a primate model of Parkinson's disease. Imaging studies have confirmed the presence of increased dopamine signals in regions treated with Spheramine.

A pilot clinical study of Spheramine performed by Titan in six patients with late-stage Parkinson's disease demonstrated substantial improvement in motor function in all six patients at one year post treatment with no significant adverse events. These results were reported at the American Academy of Neurology annual meeting in 2002 and recently updated at the International Congress of Parkinson's Disease and Movement Disorders in November 2002.

"Results from the initial pilot clinical study of Spheramine continue to look very positive," stated Ray L. Watts, M.D., Professor and Vice Chairman of the Department of Neurology at Emory University School of Medicine and principal investigator for the newly launched study. "All six patients continue to show very good improvement, with five of six patients demonstrating greater than 30 percent improvement in motor function approximately two years after treatment. The duration and magnitude of clinical improvement suggest significant therapeutic potential for Spheramine. Therefore, we look forward to this larger study to more definitively evaluate the efficacy and safety of Spheramine."

The new study will evaluate the change in motor function from baseline to one year on study, using the Unified Parkinson's Disease Rating Scale, a validated efficacy parameter for clinical testing in Parkinson's disease. Safety analysis will be performed by an independent safety monitoring committee after the first groups of 12 and 32 patients have been treated.

Patients will be randomized to Spheramine treatment or sham surgery, a minor surgical procedure that mimics the duration and setting of Spheramine treatment for study blinding. Patients will be evaluated regularly for safety and efficacy by an evaluating neurologist that is also blinded to the treatment received by the patient.

"This randomized study builds upon the strong results of our pilot clinical study," said Dr. Louis R. Bucalo, Chairman, President and CEO of Titan. "We are pleased to take this important next step in the Spheramine development program."

### **About Titan**

Titan Pharmaceuticals, Inc. (ASE: TTP) is a biopharmaceutical company focused on the development and commercialization of novel treatments for central nervous system (CNS) disorders, cancer and other serious and life-threatening diseases. Titan's numerous products in development utilize novel technologies that have the potential to significantly improve the treatment of these diseases. Titan also establishes partnerships with multinational pharmaceutical companies and government institutions for the development of its products.

The press release may contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Such statements include, but are not limited to, any statements relating to the Company's development program and any other statements that are not historical facts. Such statements involve risks and uncertainties, including, but not limited to, those risks and uncertainties relating to difficulties or delays in development, testing, regulatory approval, production and marketing of the Company's drug candidates, unexpected adverse side effects or inadequate therapeutic efficacy of the Company's drug candidates that could slow or prevent product development or commercialization, the uncertainty of patent protection for the Company's intellectual property or trade secrets and the Company's ability to obtain additional financing if necessary. Such statements are based on management's current expectations, but actual results may differ materially due to various factors, including those risks and uncertainties mentioned or referred to in this press release.

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