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Titan Pharmaceuticals Adds ProNeura Implant for Hypothyroidism to Product Development Pipeline

SOUTH SAN FRANCISCO, CA -- (Marketwired) -- 11/16/15 -- Titan Pharmaceuticals, Inc. (NASDAQ: TTNP), a specialty pharmaceutical company developing proprietary therapeutics for the treatment of select chronic diseases utilizing its ProNeura™ long-term, continuous drug delivery technology, announced today that it has added an implantable triiodothyronine (T3) product for the treatment of hypothyroidism to its product development pipeline. ProNeura-T3 could potentially offer significant advantages over once-daily oral delivery for patients who need T3 in their treatment regimen.

Hypothyroidism is a disease affecting about 15 million Americans, mostly women. Symptoms include chronic fatigue, weight gain and obesity, dry skin, impaired mental activity, and depression. The majority of patients are diagnosed with standard blood tests and receive treatment typically consisting of synthetic prohormone thyroxine (T4) given as a once-daily oral medication (Synthroid®, Levoxyl®, generics), which in turn is converted in the body to the active T3. Based upon symptoms and blood tests it is estimated that as many as 15-20 percent of hypothyroid patients are not adequately treated with this therapy, resulting in a persistent deficiency in the primary active form of thyroid hormone, T3, and physicians typically add an oral T3 regimen to the treatment of these patients.

"Once-daily synthetic T3 (Cytomel®) is an effective medication for hypothyroidism but can come with potential side effects such as headache, nervousness, irritability, sweating, and cardiac arrhythmias, which are caused by the peak-and-trough blood-level fluctuations of T3 associated with standard oral delivery," said Titan Executive Vice President and Chief Development Officer Kate Beebe, Ph.D. "Continuous delivery of T3 by the oral or parenteral route is highly desirable, but has been difficult to achieve because of the unique solubility characteristics of the compound. Thus, an implantable T3 product utilizing the ProNeura platform that more closely replicates normal thyroid physiology and avoids the unwanted side effects associated with the current pulsatile-release oral formulation could benefit patients and serve a great, unmet medical need."

"I am very pleased with our progress in the T3 implant formulation development, and look forward to providing further updates as we advance towards regulatory discussions for this potential product candidate," said Titan President Sunil Bhonsle. "The development of ProNeura for hypothyroidism could present a significant market opportunity."

Titan's ProNeura drug delivery technology is being developed for select chronic disease for which the low dose, continuous delivery of medication could offer health and safety benefits over oral delivery. The company's lead product candidate, Probuphine®, is being developed for the long-term maintenance treatment of opioid addiction. The U.S. Food and Drug

Administration has accepted for review a New Drug Application (NDA) for Probuphine and has set an action date of Feb. 27, 2016 on the NDA. Titan is also developing a ProNeura implant containing ropinirole, a dopamine agonist, for the treatment of Parkinson's disease and expects to commence clinical testing of this product candidate by the end of next year.

About the ProNeura Long-term Drug Delivery Platform

ProNeura is Titan's proprietary, long-term drug delivery platform utilized in the development of products for the treatment of select chronic conditions that may benefit from the delivery of continuous, non-fluctuating levels of certain medications over an extended period of six months to a year. ProNeura consists of a small, solid rod made from a mixture of ethylene-vinyl acetate ("EVA") and a drug substance. The resulting product is a solid matrix that is placed subdermally, normally in the inner part of the upper arm, during a simple office procedure, and is removed in a similar manner at the end of treatment. The drug substance is released continuously through the process of dissolution, resulting in a stable, non-fluctuating blood level similar to that seen with intravenous administration. These long-term, linear-release characteristics are medically desirable to avoid the peak and trough swings from oral dosing that pose problems in the current treatments for many diseases, especially diseases of the central nervous system. Titan has issued patents as well as patent applications covering the use of the ProNeura long-term drug delivery platform for the formulation of specific products for the treatment of certain chronic diseases, such as opioid dependence, Parkinson's disease, and others.

About Titan Pharmaceuticals

Titan Pharmaceuticals Inc. (NASDAQ: TTNP), based in South San Francisco, CA, is a specialty pharmaceutical company developing proprietary therapeutics primarily for the treatment of serious medical disorders. The company's lead product candidate is Probuphine®, a novel and long-acting formulation of buprenorphine for the long-term maintenance treatment of opioid dependence. Probuphine employs Titan's proprietary drug delivery system ProNeura™, which is capable of delivering sustained, consistent levels of medication for three months or longer. Titan has granted North American commercial rights for Probuphine to Braeburn Pharmaceuticals. If approved, Probuphine would be the first and only commercialized treatment of opioid dependence to provide continuous, around-the-clock blood levels of buprenorphine for six months following a single procedure. The ProNeura technology has the potential to be used in developing products for treating other chronic conditions, such as Parkinson's disease, where maintaining consistent blood levels of a dopamine agonist may benefit the patient and improve medical outcomes. For more information about Titan, please visit www.titanpharm.com.

This 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 our product development programs and any other statements that are not historical facts. Such statements involve risks and uncertainties that could negatively affect our business, operating results, financial condition and stock price. Factors that could cause actual results to differ materially from management's current expectations include those risks and uncertainties relating to the regulatory approval process, the development, testing, production and marketing of our drug candidates, patent and intellectual property matters and strategic agreements and relationships. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements

contained herein to reflect any change in our expectations or any changes in events, conditions or circumstances on which any such statement is based, except as required by law.

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