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Titan Pharmaceuticals Reports Positive Initial Results Of Probuphine® Relaunch

- Double-Digit Increase in Probuphine Shipments -

SOUTH SAN FRANCISCO, Calif., Jan. 31, 2019 /PRNewswire/ -- Titan Pharmaceuticals, Inc. (NASDAQ: TTNP), today provided an update on the U.S. commercial relaunch of Probuphine (buprenorphine) implant, its unique six-month treatment for Opioid Use Disorder (OUD).

Titan has successfully completed the program's planned transition from Braeburn Pharmaceuticals. Important commercialization accomplishments include the recruitment and onboarding of highly qualified commercial and medical affairs personnel for all targeted geographies; the engagement of a leading public relations agency for the re-branding of Probuphine; and the retention of a well-known government relations firm to plan and execute a new lobbying strategy for the product. Titan also reengaged with health care providers who had previously treated patients with Probuphine, providing retraining and medical liaison assistance where needed and creating an integrated sales strategy to support them and their office staff.

These accomplishments and other activities have contributed to a double-digit increase in total product shipments in the period following Titan's assumption of responsibility for Probuphine sales in mid-June 2018. Based on preliminary information, total shipments of Probuphine during the rest of the year increased sequentially by over 20%. Titan expects to provide more details in its fourth quarter and full-year 2018 financial results, which it expects to release in late March 2019.

"We are pleased that the initial stages of our relaunch have shown that the current market is highly receptive to our market segmentation strategy and core messaging," said Titan's Chief Commercial Officer, Dane Hallberg. "Along with the positive feedback we have received from both health care providers and their patients, the increase in product shipments suggests that our relaunch strategy is sound, and we look forward to updating investors as this initiative progresses."

About Probuphine

Probuphine is the only subdermal implant designed to deliver buprenorphine continuously for six months following a single treatment.

Probuphine was developed using ProNeura™, the continuous drug delivery system developed by Titan that consists of a small, solid implant made from a mixture of ethylene-vinyl acetate and a drug substance. The resulting construct is a solid matrix that is placed subdermally, normally in the upper arm in an outpatient office procedure and removed in a similar manner at the end of the treatment period. The U.S. Food and Drug Administration (FDA) approved Probuphine in May 2016, and it is the first and only buprenorphine implant available for the maintenance treatment of opioid addiction.
Indication

PROBUPHINE is an implant that contains the medicine buprenorphine. PROBUPHINE is used to treat certain adults who are addicted to (dependent on) opioid drugs (either prescription or illegal). PROBUPHINE is indicated for the maintenance treatment of opioid dependence in patients who have achieved and sustained prolonged clinical stability on low-to-moderate doses (doses no more than 8 mg per day) of a buprenorphine-containing product.

PROBUPHINE is part of a complete treatment program that also includes counseling and behavioral therapy.

IMPORTANT SAFETY INFORMATION

WARNING: COMPLICATIONS FROM INSERTION AND REMOVAL OF PROBUPHINE
See full prescribing information for complete Boxed Warning

Serious complications may happen from insertion and removal of PROBUPHINE, including:
- Nerve or blood vessel injury in your arm
- Movement of implant (migration). PROBUPHINE or pieces of it can move into blood vessels and to your lung, and could lead to death.
- Implant sticks out of the skin (protrusion)
- Implant comes out by itself (expulsion)

Contraindications
Hypersensitivity to buprenorphine or any other ingredients in PROBUPHINE (e.g., EVA).

Call your healthcare provider right away if:

- PROBUPHINE sticks out of the skin or comes out by itself
- You have bleeding or symptoms of infection at the site after insertion or removal, including excessive or worsening itching, pain, irritation, redness, or swelling
- You have numbness or weakness in your arm after the insertion or removal procedure
- You have weakness or numbness in your arm, or shortness of breath

Because of the risk of complications of, migration, protrusion, expulsion and nerve injury with insertion and removal of PROBUPHINE, it is only available through a restricted program called the PROBUPHINE REMS Program. Healthcare Providers who Prescribe and/or Insert PROBUPHINE must be certified with the program by enrolling and completing live training.

- PROBUPHINE is not available in retail pharmacies.

- PROBUPHINE must be inserted or removed only in the facility of the certified prescriber.

Implants may be difficult to locate if inserted too deeply, if you manipulate them, or if you gain significant weight after insertion. Your healthcare provider may do special procedures or tests, or refer you to a surgical specialist to remove the implants if they are difficult to locate.

The medicine in PROBUPHINE can cause serious and life-threatening problems, especially if you take or use certain other medicines or drugs. Call your healthcare provider right away or get emergency help if you

Feel faint or dizzy, have mental changes such as confusion, slower breathing than you normally have, severe sleepiness, blurred vision, problems with coordination, slurred speech, cannot think well or clearly, high body temperature, slowed reflexes, feel agitated, stiff muscles or have trouble walking.

These can be signs of an overdose or other serious problems.

Coma or death can happen if you take anxiety medicines or benzodiazepines, sleeping pills, tranquilizers, or sedatives, antidepressants, or antihistamines, or drink alcohol during treatment with PROBUPHINE. Tell your healthcare provider if you are taking any of these medicines or if you drink alcohol.

Who should not use Probuphine?

Do not use Probuphine if you are allergic to buprenorphine or any of its ingredients, this includes buprenorphine hydrochloride and the inactive ingredient ethylene vinyl acetate or EVA.

Probuphine may not be right for you. Before starting Probuphine tell your doctor about all of your medical conditions, including:

Trouble breathing or lung problems, an enlarged prostate gland (men), a head injury or brain problem, problems urinating, a curve in your spine that affects your breathing, liver problems, gallbladder or adrenal gland problems, Addison's disease, low thyroid hormone levels (hypothyroidism), a history of alcoholism, a history of keloid formation, connective tissue disease (such as scleroderma), or history of MRSA infections, mental problems such as hallucinations, an allergy to numbing medicines or medicines used to clean your skin, are pregnant or plan to become pregnant or are breastfeeding or plan to breastfeed.

Tell your doctor about all the medicines you take, including prescription and over-the-counter medicines, vitamins and herbal supplements.

What should I avoid while being treated with Probuphine?

- **Do not drive, operate heavy machinery, or perform any other dangerous activities until you know how this medication affects you.**
- **You should not drink alcohol** during treatment. You should not take anxiety medicines or benzodiazepines, sleeping pills, tranquilizers, or sedatives that are not prescribed to you during treatment with PROBUPHINE, as this can lead to slowed

breathing, drowsiness, delayed reaction time, loss of consciousness or even death.

What are the possible side effects of Probuphine?

Probuphine can cause serious side effects, including:

- **Infection at the insertion or removal site.** Infection may happen at the implant site during insertion or removal. Do not try to remove Probuphine yourself**.**
- **Opioid withdrawal.** If Probuphine comes out of your arm or if you stop treatment, tell your doctor right away as you can have symptoms of shaking, sweating more than normal, feeling hot or cold more than normal, runny nose, watery eyes, goose bumps, diarrhea, vomiting and muscle aches.
- **Physical dependency.**
- **Liver problems**. Call your doctor right away if you notice signs of liver problems that may include your skin or the white part of your eyes turning yellow (jaundice)
- **Allergic reaction.** If you get a rash, hives, itching, swelling of your face, or wheezing, low blood pressure, dizziness or decrease in consciousness.
- **Decrease in blood pressure**. You may feel dizzy when you get up from sitting or lying down.

Tell your healthcare provider if you develop any of the symptoms listed.

Common side effects of Probuphine include: Headache, nausea, toothache, constipation, depression, vomiting, back pain, mouth and throat pain.

Common risks with the minor surgical procedure: Itching, pain, irritation, redness, swelling, bleeding, or bruising at the insertion or removal site. Scarring around the insertion site.

Please see Full Prescribing Information, including **BOXED WARNING**.

About Titan Pharmaceuticals

Titan Pharmaceuticals, Inc. (NASDAQ:TTNP), based in South San Francisco, CA, is a commercial stage company developing proprietary therapeutics with its ProNeura™ long-term, continuous drug delivery technology. The company's lead product is Probuphine® (buprenorphine) implant, a novel and long-acting formulation of buprenorphine for the long-term maintenance treatment of opioid dependence. Approved by the U.S. Food and Drug Administration in May 2016, Probuphine is 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 also has the potential to be used in developing products for treating other chronic conditions such as Parkinson's disease and hypothyroidism, where maintaining consistent, around-the-clock blood levels of medication may benefit the patient and improve medical outcomes. For more information about Titan, please visit www.titanpharm.com.

Forward-Looking Statements

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 commercialization of Probuphine, 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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