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Titan Pharmaceuticals and MUSC FRD Enter Into Research and Option License Agreement

- Titan to Evaluate and Potentially Licence Tetrapeptide Kappa-Opioid Agonist Compounds for use in Combination with its ProNeura® Technology Platform -

SOUTH SAN FRANCISCO, Calif., Oct. 12, 2021 /PRNewswire/ -- Titan Pharmaceuticals, Inc. (NASDAQ: TTNP) ("Titan" or the "Company") today announced that it has entered into a research and option license agreement (the "Agreement") with the MUSC Foundation for Research Development ("MUSC FRD").

Under the terms of the Agreement, Titan will conduct certain research, evaluation, proof of concept development and testing of at least three tetrapeptide kappa-opioid receptor agonist compounds related to the provisional U.S. patent application previously assigned to FRD by the Medical University of South Carolina ("MUSC") and entitled "Opioid Agonists and Methods of Use Thereof." In exchange, FRD has granted Titan the option to acquire an exclusive worldwide, commercial license to the inventions related to MUSC's compounds.

"We are excited to begin research on MUSC FRD's tetrapeptide kappa-opioid receptor agonist compounds, particularly following encouraging early results from the first studies of Titan's kappa-opioid receptor agonist peptide, TP-2021, in a murine model of chronic pruritis," said Kate Beebe DeVarney, Ph.D., President and Chief Operating Officer of Titan. "Having recently demonstrated that ProNeura-based implants provided sustained, therapeutic levels of TP-2021 in this animal model, we believe that our platform can be applied to MUSC FRD's compounds as well, potentially strengthening and broadening Titan's patent portfolio in this field."

Scott Davis, Ph.D., MUSC FRD's Senior Director of Innovation Support and Commercialization, commented, "We are pleased to enter into this Agreement with Titan to develop, and potentially commercialize these promising therapeutic compounds and look

forward to the results of Titan's research initiatives."

About the MUSC Foundation for Research Development

MUSC FRD is responsible for evaluating all intellectual assets the enterprise owns and generates, cultivating value, and forging industry and other relationships resulting in products and services that provide real-life solutions to the world's medical needs. Whether its translations involve a technology license, research collaboration, or new start-up venture, the foundation serves as a dedicated one-stop shop for advancing innovation at MUSC. The team is also dedicated to building an ecosystem of innovation whose activities contribute to MUSC's overall economic impact on its state and country. For more information on MUSC FRD, please visit https://web.musc.edu/innovation/frd.

About Titan Pharmaceuticals

Titan Pharmaceuticals, Inc. (NASDAQ: TTNP) is a development-stage biotechnology company developing proprietary therapeutics using its clinically proven ProNeura® long-term, continuous drug delivery technology. The ProNeura technology has the potential to be used in developing products for treating a number of chronic conditions 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 our ability to raise capital, the winding down of U.S. commercial activities related to 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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