

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**AMENDMENT NO. 2 TO  
FORM S-1  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

**Titan Pharmaceuticals, Inc.**

(Exact name of Registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**2836**  
(Primary Standard Industrial  
Classification Code Number)

**94-3171940**  
(I.R.S. Employer  
Identification Number)

**400 Oyster Point Blvd., Suite 505  
South San Francisco, California 94080  
(650) 244-4990**

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

**Sunil Bhonsle, Chief Executive Officer  
Titan Pharmaceuticals, Inc.  
400 Oyster Point Blvd., Suite 505  
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(650) 244-4990**

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**Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.**

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act of 1933, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act of 1933, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act of 1933, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act of 1934.

Large accelerated filer       Accelerated filer       Non-accelerated filer       Smaller reporting company   
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

**CALCULATION OF REGISTRATION FEE**

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price <sup>(1)</sup>	Amount of Registration Fee
Units consisting of:	\$ 11,442,750	\$ 1,248.40
(i) Shares of common stock, \$0.001 par value per share		
(ii) warrants to purchase shares of common stock <sup>(2)</sup>		
<b>Total</b>	<b>\$ 11,442,750</b>	<b>\$ 1,248.40<sup>(3)</sup></b>

(1) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended, or the Securities Act. Pursuant to Rule 416, the securities being registered hereunder include such indeterminate number of additional securities as may be issuable to prevent dilution resulting from stock splits, stock dividends or similar transactions.

(2) No fee is required pursuant to Rule 457(g) under the Securities Act.

(3) Previously paid.

**The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to Section 8(a), may determine.**

## PRELIMINARY PROSPECTUS, SUBJECT TO COMPLETION, DATED OCTOBER 27, 2020

**70,000,000 Units consisting of shares of common stock and warrants**

We are offering 70,000,000 units, with each unit consisting of one share of our common stock, par value \$0.001 per share, and one warrant to purchase one share of our common stock. Each share of our common stock is being sold together with a warrant to purchase one share of our common stock. The warrants will have an exercise price per share of \$ ( % of the offering price), will be exercisable commencing on the effective date of an increase in our authorized shares of common stock or a reverse split in an amount sufficient to permit the exercise in full of the warrants and will expire on the fifth anniversary of the initial exercise date. The units will not be certificated and the shares of common stock and warrants comprising the units are immediately separable and will be issued separately in this offering.

Our common stock is listed on The Nasdaq Capital Market under the symbol "TTNP". On October , 2020, the last reported sale price of our common stock on The Nasdaq Capital Market was \$ per share. We do not intend to apply for the listing of the warrants on any national securities exchange or other trading market. See "Risk Related to Our Common Stock — Our failure to meet the continued listing requirements of Nasdaq could result in a de-listing of our common stock" for important information about the listing of our common stock.

The price of our common stock on The Nasdaq Capital Market during recent periods will only be one of many factors in determining the public offering price. Other factors to be considered in determining the public offering price include our history, our prospects, the industry in which we operate, our past and present operating results, the previous experience of our executive officers, the general condition of the securities markets at the time of this offering and discussions between the underwriters and prospective investors. The recent market price used throughout this prospectus may not be indicative of the final offering price. All unit, share, and warrant numbers included in this prospectus are based upon an assumed public offering price of \$0.1372, the closing price of our common stock on October 23, 2020.

**An investment in our securities involves a high degree of risk. See "Risk Factors" beginning on page 6 of this prospectus for a discussion of information that should be considered before making any investment in our securities.**

	Per Unit	Total
Public offering <sup>(1)</sup>	\$	\$
Underwriting discounts and commissions <sup>(2)</sup>	\$	\$
Proceeds to us, before expenses	\$	\$

- (1) The public offering price and underwriting discount in respect of the Units corresponds to (i) a public offering price per share of common stock of \$[ ] (\$[ ] net of the underwriting discount) and (ii) a public offering price per warrant of \$[ ] (\$[ ] net of the underwriting discount).
- (2) The underwriters will receive compensation in addition to the underwriting discount and commissions. See "Underwriting" beginning on page 21 of this prospectus for a description of compensation payable to the underwriters.

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

The underwriters have the option to purchase up to (i) 7,000,000 additional shares of common stock, and/or (ii) additional warrants to purchase up to 7,000,000 additional shares of common stock solely to cover over-allotments, if any, at the public offering price per share of common stock and the public offering price per warrant set forth above less the underwriting discounts and commissions. The over-allotment option may be used to purchase shares of common stock and/or warrants, or any combination thereof, as determined by the underwriters, but such purchases cannot exceed an aggregate of 10% of the number of shares of common stock and 10% of the warrants sold in the primary offering. The over-allotment option is exercisable for 45 days from the date of this prospectus.

We anticipate that delivery of the shares and warrants comprising the units will be made on or about , 2020.

*Book-Running Manager*

**MAXIM GROUP LLC**

The date of this prospectus is , 2020

**The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities in any jurisdiction where the offer or sale is not permitted.**

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We have not, and the underwriters have not, authorized anyone to provide you with information that is different from that contained in this prospectus we may authorize to be delivered or made available to you. When you make a decision about whether to invest in our securities, you should not rely upon any information other than the information in this prospectus or in any free writing prospectus that we may authorize to be delivered or made available to you. Neither the delivery of this prospectus nor the sale of our securities means that the information contained in this prospectus or any free writing prospectus is correct after the date of this prospectus or such free writing prospectus. This prospectus is not an offer to sell or the solicitation of an offer to buy our securities in any circumstances under which the offer or solicitation is unlawful.

For investors outside the United States: We have not, and the underwriters have not, taken any action that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities covered hereby and the distribution of this prospectus outside the United States.

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market share, is based on information from our own management estimates and research, as well as from industry and general publications and research, surveys and studies conducted by third parties. Management estimates are derived from publicly available information, our knowledge of our industry and assumptions based on such information and knowledge, which we believe to be reasonable. Our management estimates have not been verified by any independent source, and we have not independently verified any third-party information. In addition, assumptions and estimates of our and our industry's future performance are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in "Risk Factors." These and other factors could cause our future performance to differ materially from our assumptions and estimates. See "Cautionary Note Regarding Forward-Looking Statements."

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to the registration statement of which this prospectus is a part were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties thereto, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

ProNeura™ is a trademark and Probuphine® is a registered trademark of Titan Pharmaceuticals, Inc. This prospectus also includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, trademarks and tradenames referred to in this prospectus appear (after the first usage) without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

## SUMMARY

*This summary provides an overview of selected information contained elsewhere or incorporated by reference in this prospectus and does not contain all of the information you should consider before investing in our securities. You should carefully read this prospectus and the registration statement of which this prospectus is a part in their entirety before investing in our securities, including the information discussed under “Risk Factors” and our financial statements and notes thereto that are incorporated by reference in this prospectus. Unless otherwise indicated herein, the terms “Titan,” “we,” “our,” “us,” or “the Company” refer to Titan Pharmaceuticals, Inc.*

### Company Overview

We are a pharmaceutical company developing therapeutics utilizing our proprietary long-term drug delivery platform, ProNeura™, for the treatment of select chronic diseases for which steady state delivery of a drug provides an efficacy and/or safety benefit. ProNeura consists of a small, solid implant made from a mixture of EVA (ethylene-vinyl acetate) and a drug substance. The resulting product is a solid matrix that is administered subdermally, normally in the inner upper arm, in a brief, outpatient procedure and is removed in a similar manner at the end of the treatment period. These procedures may be performed by trained health care providers, or HCPs, including licensed and surgically qualified physicians, nurse practitioners, and physician’s assistants in a HCP’s office or other clinical setting.

Probuphine® is the first product based on our ProNeura technology approved in the U.S., Canada and the European Union, or EU, for the maintenance treatment of opioid use disorder in clinically stable patients taking 8 mg or less a day of oral buprenorphine. On October 15, 2020, we issued a press release announcing our decision to discontinue selling Probuphine® (buprenorphine) implant and wind down our commercialization activities, and to pursue a plan that will enable us to focus on our ProNeura-based product development programs. We based this decision on several factors, most notably that commercializing Probuphine with the requirements of the current product label and the Risk Evaluation and Mitigation Strategy, or REMS, program has proven to be onerous, leading to minimal utilization despite our significant efforts to overcome these obstacles. Other factors that have negatively impacted Titan’s ability to effectively commercialize Probuphine include the financial constraints that have limited our sales and marketing capabilities; suboptimal reimbursement rates; and the complexity of the distribution channel. The continually changing environment due to the COVID-19 pandemic has further exacerbated these issues. As a result, sales of Probuphine have been, and would likely continue for the foreseeable future to be, extremely limited. After careful review of the recent sales and marketing results, the hurdles that Titan has and will continue to face, and the substantial additional expenditures and resources that would be required, our board of directors made a determination to advise the U.S. Food and Drug Administration (“FDA”) of its decision to cease commercialization of Probuphine. A wind-down plan taking into considerations FDA and state regulatory requirements, as well as business considerations is underway.

On October 25, 2020, we entered into a Debt Settlement and Release Agreement with L. Molteni & C. dei F.lli Alitti Società di Esercizio S.p.A., or Molteni, and Horizon Credit II LLC, or Horizon, the holders of our approximately \$5.2 million of outstanding secured debt (\$4.0 million principal amount and \$1.2 million in payoff amounts) to settle such obligations for \$1.6 million in cash, the transfer of certain Probuphine assets to Molteni, including all of our manufacturing equipment, and the termination of our rights to future payments under the asset purchase and supply agreement with Molteni. The settlement agreement will provide for the release to us of the remaining collateral, which will enable us to continue operating as a research and development company. The consummation of such agreement is contingent on the completion of this offering. See “Use of Proceeds.”

### Development Programs

#### *Kappa Opioid Agonist Peptide Program*

In October 2020, we entered into a non-binding term sheet with JT Pharmaceuticals, Inc., or JT Pharma, for the acquisition and development of JT Pharma’s kappa opioid agonist peptide, or JT-09, for use in combination with our ProNeura technology. James McNab, a member of our board of directors, is a principal of JT Pharma. Several years ago, we began limited laboratory work in in collaboration with

JT Pharma to assess the feasibility of delivering JT-109 through peptide-infused ProNeura rods in animal models. Our initial work focused on JT-109's ability to activate peripheral kappa opioid receptors, with the JT ProNeura rods potentially providing a non-addictive treatment for certain types of pain. Recently, our collaboration with JT has pivoted to explore the feasibility of also using JT ProNeura rods in the treatment of chronic pruritus, a debilitating condition defined as itching of the skin lasting longer than six weeks. In 2015, an estimated 23 – 44 million Americans suffered from chronic pruritus in the setting of both cutaneous and systemic conditions. Current treatments include anti-histamines, corticosteroids, and over-the-counter lotions, all of which are relatively ineffective and may have undesirable side-effect profiles. The antipruritic effect of kappa opioid agonists is thought to be related to their binding to kappa opioid receptors on keratinocytes, immune cells and peripheral itch neurons. We believe, based on our early animal data, that subcutaneous implantation of the JT ProNeura rods could potentially deliver therapeutic concentrations of JT-09 for up to one year. A portion of the proceeds of this offering are expected to be used to conduct the initial non-clinical studies designed to establish proof of concept in an animal model. See "Use of Proceeds." If successful, we will need to conduct Investigational New Drug, or IND, enabling safety and pharmacology studies.

The efficacy of a kappa opioid agonist was first demonstrated in humans by Toray Industries, Inc., or Toray, using a highly potent small molecule kappa agonist, nalfurafine. Toray's application for nalfurafine was approved in Japan for the treatment of pruritus in end stage kidney disease, or ESKD, and chronic liver disease. However, because it is a small molecule that penetrates into the central nervous system, or CNS, some CNS-related adverse events were observed. More recently, Cara Therapeutics Inc., or Cara, has demonstrated in phase 2 and phase 3 clinical trials the efficacy of a selective kappa opioid receptor agonist peptide, CR845, in the treatment of pruritus associated with ESKD, and Cara has announced plans to submit a New Drug Application in the U.S. in the second half of 2020.

According to published reports, the prevalence of ESKD has been rising continuously, and reached approximately 750,000 in 2017. Pruritus affects approximately 40% of patients with ESKD and has been associated with poor quality of life, poor sleep, depression, and mortality. We believe a ProNeura rod containing JT 09 could potentially eliminate the need for multiple weekly injections by delivering low-dose, non-fluctuating medication levels for six months or longer following implant.

#### Nalmefene Development Program

In September 2019, the National Institute for Drug Addiction, or NIDA, awarded us an approximately \$8.7 million grant over two years for our nalmefene implant development program for the prevention of opioid relapse following detoxification. An injectable formulation of nalmefene was approved by the FDA in 1995 for the management and reversal of opioid overdose, including respiratory depression. Oral nalmefene was approved by the European Medicines Agency in 2013 for treating alcohol dependence.

The NIDA grant provides funds for the completion of implant formulation development, cGMP manufacturing and non-clinical studies required for filing an IND. During the first quarter of 2020 we met with the FDA to review our non-clinical development plans and obtain guidance regarding filing an IND. The FDA provided clear guidance on the type of development plan that we should follow, specifically that this product development should follow the 505(b)(i) regulatory pathway due to the lack of safety data on nalmefene for a long acting formulation, and the non-clinical studies that will be required to file an IND. Based on this input, collecting all the non-clinical chronic toxicology data will require an additional study as well as increasing the duration of an ongoing study that will delay filing of the IND to mid-2021. We have discussed the change in development plan with NIDA and they have accepted our plan to reallocate previously approved funds for conduct of the studies.

#### **Management Restructuring**

As previously disclosed, Sunil Bhonsle, our Chief Executive Officer, advised us of his desire to retire before the end of the year. Effective October 18, 2020, Kate DeVarney, our Executive Vice President and Chief Scientific Officer and a member of the board of directors, assumed the roles of President and Chief Operating Officer. Effective October 31, 2020, Mr. Bhonsle will step down from his executive role. Dr. Marc Rubin, our Executive Chairman, together with Dr. DeVarney, will oversee our product development activities.

**Other Recent Developments**

*Stockholder Meeting:* At a special meeting of stockholders held on September 24, 2020, our stockholders approved an amendment to our certificate of incorporation to increase the authorized number of shares of common stock from 125,000,000 to 225,000,000. The amendment was filed with the Secretary of State of the State of Delaware the same day.

*Registered Direct Offering:* On September 28, 2020, we completed a registered direct offering pursuant to which we sold an aggregate of 19,440,000 shares of common stock at a purchase price of \$0.14 per share to a couple of institutional investors. We received net proceeds of approximately \$2.5 million, after payment of placement agent fees and other offering expenses.

*Nasdaq Listing:* On October 15, 2020, we provided a letter to The Nasdaq Capital Market, or Nasdaq, that set forth our plan to regain compliance with the \$2.5 million minimum stockholders' equity requirement for continued listing. The plan described the wind down of our commercial activities, the settlement of our debt obligations, the reduction in personnel and overhead costs and the anticipated proceeds of this offering. Nasdaq has requested additional financial information in support of our compliance plan, which we submitted on October 19, 2020. There is no assurance that Nasdaq will accept our plan or that we will not be delisted from Nasdaq for failure to meet the minimum stockholders' equity or other requirements. For additional information regarding our continued listing on Nasdaq, see "Risk Factors — Our failure to meet the continued listing requirements of Nasdaq could result in a delisting of our common stock.

**Corporate Information**

We were incorporated under the laws of the State of Delaware on February 7, 1992. Our principal executive offices are located 400 Oyster Point Boulevard, Suite 505, South San Francisco, CA 94080. Our telephone number is (650) 244-4990. Our website address is [www.titanpharm.com](http://www.titanpharm.com). We make our periodic and current reports that are filed with the SEC available, free of charge, on our website as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The information contained in, and that can be accessed through, our website is not incorporated into and is not a part of this prospectus.

<b>THE OFFERING</b>	
<b>Units offered</b>	70,000,000 units. Each unit consists of one share of common stock and a warrant to purchase one share of our common stock.
<b>Offering price</b>	\$0.1372 per unit based on an assumed offering price of \$0.1372, the closing price of our common stock on October 23, 2020.
<b>Description of warrants</b>	The warrants will be exercisable beginning on the effective date of our stockholders' approval of an increase in our authorized shares of common stock or a reverse stock split in an amount sufficient to permit the exercise in full of the warrants, and will expire on the five year anniversary of the original exercise date. We do not have a sufficient number of authorized shares to permit exercise of the warrants. In the event that we are unable to effect an increase in our authorized shares of common stock or a reverse split in an amount sufficient to permit the exercise in full of the warrants, the warrants will not be exercisable and therefore have no value. In no event will the warrants have any cash value other than in connection with a fundamental transaction as described therein.
<b>Common stock outstanding before this offering</b>	116,763,180 shares
<b>Common stock outstanding after this offering</b>	186,763,180 shares (or 256,763,180 shares if the warrants sold in this offering are exercised in full).
<b>Overallotment</b>	We have granted the representative an option to purchase additional shares of common stock equal to 10% of the shares in the offering and/or additional warrants equal to 10% of the warrants in the offering at the assumed public offering price per share of common stock and the assumed public offering price per warrant set forth on the cover page hereto less the underwriting discounts and commission. This option is exercisable, in whole or in part, for a period of 45 days from the date of this prospectus.
<b>Use of proceeds</b>	We currently intend to use the net proceeds from this offering to make the cash payments pursuant to the debt settlement agreement, to fund ongoing product development activities, and to pay expenses associated with the winding down of commercial operations. See "Use of Proceeds" herein.
<b>Risk Factors</b>	Investing in our securities involves a high degree of risk. You should carefully review and consider the "Risk Factors" section of this prospectus for a discussion of factors to consider before deciding to invest in shares of our common stock.
<b>Lock-up and Voting Agreement</b>	We expect certain investors in this offering to agree with the representative to enter into a lock-up and voting agreement whereby each such investor will be subject to a lock-up period through the closing of this offering. This means that, during the applicable lock-up period, such persons may not offer for sale, contract to sell, sell, distribute, grant any option, right or warrant to purchase, pledge, hypothecate or otherwise dispose of, directly or indirectly, any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, shares of our common stock. Certain limited transfers are permitted during the lock-up period if the transferee agrees to these lock-up restrictions. Additionally, such

investors will agree to vote all shares of common stock they beneficially own on the closing date of this offering, including the shares purchased in the offering, with respect to any proposals presented to the stockholders of the Company at the Company's next stockholders meeting.

**Market Symbol and trading**

Our common stock is listed on The Nasdaq Capital Market under the symbol "TTNP." There is no established trading market for the warrants and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the warrants will be limited.

The number of shares of our common stock that will be outstanding immediately after this offering as shown above is based on 116,763,180 shares outstanding as of October 23, 2020 and excludes:

- 897,426 shares of our common stock issuable upon the exercise of outstanding options with a weighted average exercise price of \$7.58 per share;
- 25,932,114 shares of our common stock issuable upon the exercise of outstanding warrants with a weighted average exercise price of \$0.42 per share;
- 3,422,777 shares issuable upon conversion of a portion of our outstanding debt; and
- 862,172 additional shares of our common stock reserved for future issuance under our 2015 equity incentive plan.

Except as otherwise indicated herein, all information in this prospectus, including the number of shares that will be outstanding after this offering, assumes no exercise by the underwriters of their option to purchase additional securities.

## RISK FACTORS

*Any investment in our securities involves a high degree of risk. Investors should carefully consider the risks described below and all of the information contained or incorporated by reference in this prospectus before deciding whether to purchase our common stock. Our business, financial condition or results of operations could be materially adversely affected by these risks if any of them actually occur. This prospectus also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks we face as described below and elsewhere in this prospectus.*

### Risks Related to Our Business

***Our ProNeura development programs are at very early stages and will require substantial additional resources that may not be available to us.***

To date, other than our work on Probuphine in OUD, and our work on nalmefene, we have conducted only limited research and development activities assessing our ProNeura delivery system's applicability in other potential indications. While the nalmefene program is being funded in large part by NIDA, we expect that the proceeds of this offering will only be sufficient to complete the proof of concept work on JT-09 and we will require substantial additional funds to support further research and development activities, including the anticipated costs of nonclinical studies and clinical trials, regulatory approvals and eventual commercialization of any therapeutic based on our ProNeura platform technology. If we are unable to obtain substantial government grants or enter into third party collaborations to fund our ProNeura programs, we will need to seek additional sources of financing, which may not be available on favorable terms, if at all. If we do not succeed in obtaining the requisite funding for our ProNeura programs, we could be forced to discontinue product development. Furthermore, funding arrangements with collaborative partners or others may require us to relinquish rights to technologies, product candidates or products that we would otherwise seek to develop or commercialize ourselves or license rights to technologies, product candidates or products on terms that are less favorable to us than might otherwise be available.

Our ability to successfully develop any future product candidates based on our ProNeura drug delivery technology is subject to the risks of failure and delay inherent in the development of new pharmaceutical products, including: delays in product development, clinical testing, or manufacturing; unplanned expenditures in product development, clinical testing, or manufacturing; failure to receive regulatory approvals; emergence of superior or equivalent products; inability to manufacture on our own, or through any others, product candidates on a commercial scale; and failure to achieve market acceptance. Importantly, if the JT-09 initial proof of concept efforts are unsuccessful and we discontinue this program, our future prospects could be materially adversely impacted. Because of these risks, our research and development efforts may not result in any commercially viable products and our business, financial condition, and results of operations could be materially harmed.

***Clinical trials required for new product candidates are expensive and time-consuming, and their outcome is uncertain.***

Conducting clinical trials is a lengthy, time-consuming, and expensive process. The length of time may vary substantially according to the type, complexity, novelty, and intended use of the product candidate, and often can be several years or more per trial. Delays associated with products for which we are directly conducting clinical trials may cause us to incur additional operating expenses. The commencement and rate of completion of clinical trials may be delayed by many factors, including, for example:

- inability to manufacture sufficient quantities of qualified materials under cGMP, for use in clinical trials;
- slower than expected rates of patient recruitment;
- failure to recruit a sufficient number of patients; modification of clinical trial protocols;
- changes in regulatory requirements for clinical trials;
- the lack of effectiveness during clinical trials;

- the emergence of unforeseen safety issues;
- delays, suspension, or termination of the clinical trials due to the institutional review board responsible for overseeing the study at a particular study site; and
- government or regulatory delays or “clinical holds” requiring suspension or termination of the trials.

The results from early clinical trials are not necessarily predictive of results obtained in later clinical trials. Accordingly, even if we obtain positive results from early clinical trials, we may not achieve the same success in future clinical trials. Clinical trials may not demonstrate statistically significant safety and effectiveness to obtain the requisite regulatory approvals for product candidates. The failure of clinical trials to demonstrate safety and effectiveness for the desired indications could cause us to abandon a product candidate and could delay development of other product candidates. Any delay in, or termination of, our clinical trials could materially harm our business, financial condition, and results of operations.

***The winding down of our commercial operations may be more costly and time-consuming than we anticipate.***

The cessation of our Probuphine related commercial activities requires us to comply with FDA and state regulatory requirements, including those related to notifications to various stakeholders and the continuation of adverse event reporting, as well as to address a number of business considerations, such as termination of third-party agreements and transfer of manufacturing equipment. The costs and timing associated with the wind down of our commercial operations may exceed our current estimates, requiring a reallocation of proceeds that may limit what we can accomplish in our product development programs unless additional financing is procured sooner than we currently anticipate.

***We face risks associated with third parties conducting preclinical studies and clinical trials of our products.***

We depend on third-party laboratories and medical institutions to conduct preclinical studies and clinical trials for our products and other third-party organizations to perform data collection and analysis, all of which must maintain both good laboratory and good clinical practices. We also depend upon third party manufacturers for the production of any products we may successfully develop to comply with cGMP of the FDA, which are similarly outside our direct control. If third party laboratories and medical institutions conducting studies of our products fail to maintain both good laboratory and clinical practices, the studies could be delayed or have to be repeated.

***We face risks associated with product liability lawsuits that could be brought against us.***

The testing, manufacturing, marketing and sale of human therapeutic products entail an inherent risk of product liability claims. We currently have a limited amount of product liability insurance, which may not be sufficient to cover claims that may be made against us in the event that the use or misuse of our product candidates causes, or merely appears to have caused, personal injury or death. In the event we are forced to expend significant funds on defending product liability actions, and in the event those funds come from operating capital, we will be required to reduce our business activities, which could lead to significant losses. Adequate insurance coverage may not be available in the future on acceptable terms, if at all. If available, we may not be able to maintain any such insurance at sufficient levels of coverage and any such insurance may not provide adequate protection against potential liabilities. Whether or not a product liability insurance policy is obtained or maintained in the future, any claims against us, regardless of their merit, could severely harm our financial condition, strain our management and other resources or destroy the prospects for commercialization of the product which is the subject of any such claim.

***We may be unable to protect our patents and proprietary rights.***

Our future success will depend to a significant extent on our ability to:

- obtain and keep patent protection for our products, methods and technologies on a domestic and international basis;
- enforce our patents to prevent others from using our inventions;
- maintain and prevent others from using our trade secrets; and

- operate and commercialize products without infringing on the patents or proprietary rights of others.

We cannot assure you that our patent rights will afford any competitive advantages, and these rights may be challenged or circumvented by third parties. Further, patents may not be issued on any of our pending patent applications in the U.S. or abroad. Because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that before a potential product can be commercialized, any related patent may expire or remain in existence for only a short period following commercialization, reducing or eliminating any advantage of the patent. If we sue others for infringing our patents, a court may determine that such patents are invalid or unenforceable. Even if the validity of our patent rights is upheld by a court, a court may not prevent the alleged infringement of our patent rights on the grounds that such activity is not covered by our patent claims.

In addition, third parties may sue us for infringing their patents. In the event of a successful claim of infringement against us, we may be required to:

- pay substantial damages;
- stop using our technologies and methods;
- stop certain research and development efforts;
- develop non-infringing products or methods; and
- obtain one or more licenses from third parties.

If required, we cannot assure you that we will be able to obtain such licenses on acceptable terms, or at all. If we are sued for infringement, we could encounter substantial delays in development, manufacture and commercialization of our product candidates. Any litigation, whether to enforce our patent rights or to defend against allegations that we infringe third party rights, will be costly, time consuming, and may distract management from other important tasks.

We also rely in our business on trade secrets, know-how and other proprietary information. We seek to protect this information, in part, through the use of confidentiality agreements with employees, consultants, advisors and others. Nonetheless, we cannot assure you that those agreements will provide adequate protection for our trade secrets, know-how or other proprietary information and prevent their unauthorized use or disclosure. To the extent that consultants, key employees or other third parties apply technological information independently developed by them or by others to our proposed products, disputes may arise as to the proprietary rights to such information, which may not be resolved in our favor.

***We must comply with extensive government regulations.***

The research, development, manufacture, labeling, storage, record-keeping, advertising, promotion, import, export, marketing and distribution of pharmaceutical products are subject to an extensive regulatory approval process by the FDA in the U.S. and comparable health authorities in foreign markets. The process of obtaining required regulatory approvals for drugs is lengthy, expensive and uncertain. Approval policies or regulations may change, and the FDA and foreign authorities have substantial discretion in the pharmaceutical approval process, including the ability to delay, limit or deny approval of a product candidate for many reasons. Despite the time and expense invested in clinical development of product candidates, regulatory approval is never guaranteed. Regulatory approval may entail limitations on the indicated usage of a drug, which may reduce the drug's market potential. Even if regulatory clearance is obtained, post-market evaluation of the products, if required, could result in restrictions on a product's marketing or withdrawal of the product from the market, as well as possible civil and criminal sanctions. Of the large number of drugs in development, only a small percentage successfully complete the regulatory approval process and are commercialized.

***We face intense competition.***

With respect to our product development programs, we face competition from numerous companies that currently market, or are developing, products for the treatment of the diseases and disorders we have

targeted, many of which have significantly greater research and development capabilities, experience in obtaining regulatory approvals and manufacturing, marketing, financial and managerial resources than we have. We also compete with universities and other research institutions in the development of products, technologies and processes, as well as the recruitment of highly qualified personnel. Our competitors may succeed in developing technologies or products that are more effective than the ones we have under development or that render our proposed products or technologies noncompetitive or obsolete. In addition, our competitors may achieve product commercialization or patent protection earlier than we will.

***We depend on a small number of employees and consultants.***

We are highly dependent on the services of a limited number of personnel and the loss of one or more of such individuals could substantially impair our ongoing commercialization efforts. We compete in our hiring efforts with other pharmaceutical and biotechnology companies and it may be difficult and could take an extended period of time because of the limited number of individuals in our industry with the range of skills and experience required and because of our limited resources.

In addition, we retain scientific and clinical advisors and consultants to assist us in all aspects of our business. Competition to hire and retain consultants from a limited pool is intense. Further, because these advisors are not our employees, they may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us, and typically they will not enter into non-compete agreements with us. If a conflict of interest arises between their work for us and their work for another entity, we may lose their services. In addition, our advisors may have arrangements with other companies to assist those companies in developing products or technologies that may compete with ours.

***We face potential liability related to the privacy of health information we obtain from clinical trials sponsored by us or our collaborators, from research institutions and our collaborators, and directly from individuals.***

Numerous federal and state laws, including state security breach notification laws, state health information privacy laws, and federal and state consumer protection laws, govern the collection, use, and disclosure of personal information. In addition, most health care providers, including research institutions from which we or our collaborators obtain patient health information, are subject to privacy and security regulations promulgated under the Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act. Although we are not directly subject to HIPAA, we could potentially be subject to criminal penalties if we, our affiliates, or our agents knowingly obtain or disclose individually identifiable health information maintained by a HIPAA-covered entity in a manner that is not authorized or permitted by HIPAA.

***We face risks related to health epidemics, such as the current COVID-19 global pandemic, that could adversely affect our operations or financial results.***

The spread of COVID-19, the novel coronavirus, including restrictions on travel, “shelter in place” orders, and quarantine policies put into place by businesses and state and local governments to mitigate its transmission, may have a material adverse effect on our business. While the duration of the pandemic and its potential economic impact are difficult to predict, it already has caused significant disruption in the healthcare industry and is likely to have continuing impacts as it continues. The travel restrictions, “shelter in place” orders, quarantine policies, and general concerns about the spread of COVID-19 was a significant factor in our decision to wind down our commercial operations because of the resulting disruptions in the delivery of healthcare to patients, our sales and marketing efforts and REMS training activities, as well as the operations of the various parts of our supply and distribution chain. The ultimate impact of the COVID-19 pandemic, or any other health epidemic, is highly uncertain and subject to change. We do not yet know the full extent of potential impacts on our business, healthcare systems or the global economy as a whole. As the pandemic continues, it may result in a sustained economic downturn that could affect our ability to access capital on reasonable terms, or at all.

**Risks Related to Our Financial Condition and Need for Additional Capital**

***We have incurred net losses in almost every year since our inception and we may never achieve or sustain profitability.***

We have incurred net losses in almost every year since our inception. Our financial statements have been prepared assuming that we will continue as a going concern. For the years ended December 31, 2019

and 2018, we had net losses of approximately \$16.5 million and \$9.3 million, respectively, and had net cash used in operating activities of approximately \$15.4 million and \$8.4 million, respectively. These net losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' equity and working capital. We expect to continue to incur net losses and negative operating cash flow for the foreseeable future as we wind down our commercial activities and focus on development of ProNeura based products. The amount of future net losses will depend, in part, on the rate of future growth of our expenses and our ability to obtain government or third party funding for our development programs. There can be no assurance that we will ever achieve profitability.

***We will require additional proceeds to fund our product development programs.***

We currently estimate that our available cash and cash equivalents, including the approximately \$2.5 million received from our September 2020 financing, will be sufficient to fund our operations into November 2020. We believe that the proceeds of this offering will be sufficient to meet our obligations under the debt settlement agreement, wind down our commercial operations and fund our working capital needs and product development efforts for more than 12 months. We will require additional funds to advance JT-09 beyond the proof of concept stage, if successful, which we expect to know by the end of the first quarter of 2021, and to fund any of our ProNeura development programs into the clinic and to complete the regulatory approval process necessary to commercialize any products we might develop. While we are currently evaluating the alternatives available to us, including government grants and third-party collaborations for one or more of our ProNeura programs, our efforts to address our liquidity requirements may not be successful. There can be no assurance that any source of capital will be available to us on acceptable terms.

***We have a limited number of authorized shares of common stock available for issuance and will need to seek stockholder approval to amend our charter to either effect an increase in our authorized shares of common stock or a reverse split. The issuance of additional securities if we obtain the required amendment approval will cause investors to experience dilution***

Following this offering, there will only be minimal authorized but unissued or reserved shares of our common stock. We do not have a sufficient number of authorized shares to permit exercise of the warrants or to undertake the additional equity financing that we will need to fund our product development programs. We have agreed to seek stockholder approval of an amendment to our certificate of incorporation to effect an increase in our authorized shares of common stock or a reverse split in an amount sufficient to permit the exercise in full of the warrants offered hereby, which if approved will provide us with additional available shares. If we do not receive the requisite stockholder approval to enable us to issue equity in the future, our operations will likely be materially adversely impacted. There are risks associated with effecting a reverse split, including a decline in the market price of our common stock and the possibility of certain stockholders owning "odd lots" of less than 100 shares, which may be more difficult to sell, or require greater transaction costs per share to sell, than shares in "round lots" of even multiples of 100 shares. In addition, because holders of our common stock have no preemptive rights to purchase or subscribe for any unissued stock of our company, the availability of a greater number of authorized shares, whether as a result of a reverse split or an increase in the authorized number, could result in additional dilution to our existing stockholders. Moreover, we may issue derivative securities, including options and/or warrants, from time to time, to procure qualified personnel or for other business reasons. The issuance of any such derivative securities, which is at the discretion of our board of directors, may further dilute the equity ownership of our stockholders.

***Our net operating losses and research and development tax credits may not be available to reduce future federal and state income tax payments.***

At December 31, 2019, we had federal net operating loss and tax credit carryforwards of approximately \$268.3 million and approximately \$8.5 million, respectively, and state net operating loss and tax credit carryforwards of approximately \$108.2 million and approximately \$9.1 million, respectively, available to offset future taxable income, if any. Current federal and state tax laws include substantial restrictions on the utilization of net operating loss and tax credits in the event of an ownership change and we cannot assure you that our net operating loss and tax carryforwards will continue to be available.

***We received a loan under the Paycheck Protection Program of the CARES Act, and all or a portion of the loan may not be forgivable.***

On April 20, 2020, we received an approximately \$0.7 million PPP Loan pursuant to the Paycheck Protection Program of the CARES Act. The PPP Loan matures in April 2022 with an annual interest rate of 1.0%. The PPP Loan has a six month deferral of payments period and may be prepaid at any time without penalty. The proceeds of the PPP Loan are to be used to retain workers and maintain payroll and make mortgage interest, lease and utility payments. Under the CARES Act, we will be eligible to apply for forgiveness of all loan proceeds used to pay payroll costs, rent, utilities and other qualifying expenses during the 24-week period following receipt of the loan, provided that we maintain our number of employees and compensation within certain parameters during such period. Not more than 40% of the forgiven amount may be for non-payroll costs. If the conditions outlined in the PPP loan program are adhered to by us, all or part of such loan could be forgiven. However, we cannot provide any assurance that we will be eligible for loan forgiveness or that any amount of the PPP loan will ultimately be forgiven by the SBA. Any forgiven amounts will not be included in our taxable income.

**Risks Related to Our Common Stock**

***Our failure to meet the continued listing requirements of Nasdaq could result in a delisting of our common stock.***

On August 18, 2020, we received a notice from the Nasdaq Capital Market, or Nasdaq, that because our stockholders' equity is less than \$2,500,000, we are no longer in compliance with the minimum stockholders' equity requirement for continued listing pursuant to Nasdaq Listing Rule 5550(b)(1). The proceeds of this offering, together with the wind down of our commercial operations and settlement of our debt obligations, will enable us to regain compliance with the minimum stockholders' equity requirement; however, we may not be able to maintain compliance with the minimum stockholders' equity requirement for a sufficient period of time to satisfy Nasdaq. If we are unable to demonstrate to Nasdaq's satisfaction that we will be able to sustain compliance with this requirement, Nasdaq may delist our common stock. In addition, even if we regain technical compliance with the stockholders' equity requirement, we will have to continue to meet other objective and subjective listing requirements to continue to be listed on the Nasdaq Capital Market. There can be no assurance that we will be able to maintain compliance and meet Nasdaq's minimum stockholders' equity requirements.

In addition, on September 19, 2019, we received a letter from Nasdaq notifying us that the market price of our common stock has been below the \$1.00 minimum bid price requirement for continued listing and requiring us to regain compliance with the minimum bid price requirement within 180 days. On April 17, 2020, Nasdaq notified us that the 180-day period to regain compliance with the minimum bid price requirement had been extended due to the global market impact caused by COVID-19. More specifically, Nasdaq has stated that the compliance periods for any company previously notified about non-compliance are suspended effective April 16, 2020, until June 30, 2020. On July 1, 2020, companies received the balance of any pending compliance period exception to regain compliance as a result of which we now have until November 30, 2020 to regain compliance with the minimum bid price rule. Our prior efforts to obtain stockholder approval of a reverse stock split of our outstanding shares of common stock that would increase the closing bid price of our common stock to above \$1.00 were not successful. We intend to seek stockholder approval of a reverse split in the range of one-for-15 and one-for-30 that we would have the effect of regaining compliance with the minimum bid price requirement in addition to providing sufficient authorized shares for the exercise of the warrants offered hereby. There can be no assurance that stockholders will approve such reverse split proposal in a timely manner or at all.

If our common stock is delisted, our common stock would likely then trade only in the over-the-counter market. If our common stock were to trade on the over-the-counter market, selling our common stock could be more difficult because smaller quantities of shares would likely be bought and sold, transactions could be delayed, and we could face significant material adverse consequences, including: a limited availability of market quotations for our securities; reduced liquidity with respect to our securities; a determination that our shares are a "penny stock," which will require brokers trading in our securities to adhere to more stringent rules, possibly resulting in a reduced level of trading activity in the secondary trading

market for our securities; a reduced amount of news and analyst coverage for our Company; and a decreased ability to issue additional securities or obtain additional financing in the future. These factors could result in lower prices and larger spreads in the bid and ask prices for our common stock and would substantially impair our ability to raise additional funds and could result in a loss of institutional investor interest and fewer development opportunities for us.

In addition to the foregoing, if our common stock is delisted from Nasdaq and it trades on the over-the-counter market, the application of the “penny stock” rules could adversely affect the market price of our common stock and increase the transaction costs to sell those shares. The SEC has adopted regulations which generally define a “penny stock” as an equity security that has a market price of less than \$5.00 per share, subject to specific exemptions. If our common stock is delisted from Nasdaq and it trades on the over-the-counter market at a price of less than \$5.00 per share, our common stock would be considered a penny stock. The SEC’s penny stock rules require a broker-dealer, before a transaction in a penny stock not otherwise exempt from the rules, to deliver a standardized risk disclosure document that provides information about penny stocks and the risks in the penny stock market. The broker-dealer must also provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker-dealer and the salesperson in the transaction, and monthly account statements showing the market value of each penny stock held in the customer’s account. In addition, the penny stock rules generally require that before a transaction in a penny stock occurs, the broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser’s agreement to the transaction. If applicable in the future, these rules may restrict the ability of brokers-dealers to sell our common stock and may affect the ability of investors to sell their shares, until our common stock no longer is considered a penny stock.

***We have used almost all of our unreserved, authorized shares.***

After giving effect to this offering, we will have used almost all of our unreserved authorized shares and will need stockholder approval to implement an increase in our authorized shares of common stock or a reverse stock split. Our certificate of incorporation and the Delaware General Corporation Law, or the DGCL, currently require the approval of stockholders holding not less than a majority of all outstanding shares of capital stock entitled to vote in order to approve an increase in our authorized shares of common stock or a reverse stock split. There are no assurances that stockholder approval will be obtained, in which event will be unable to raise additional capital through the issuance of shares of common stock to fund our future operations.

***The price of our common stock may fluctuate significantly, and this may make it difficult for you to resell the common stock you want or at prices you find attractive.***

The price of our common stock constantly changes. The price of our common stock could fluctuate significantly for many reasons, including the following:

- results of our product development programs;
- future announcements concerning us, including our clinical and product development strategy, or our competitors;
- regulatory developments;
- reports and recommendations of analysts and whether or not we meet the milestones and metrics set forth in such reports;
- introduction of new products;
- fluctuations of investor interest in the pharmaceutical and healthcare sectors; and
- fluctuations in the economy, world political events or general market conditions.

The stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions,

interest rate changes or international currency fluctuations, may negatively impact the market price of shares of our common stock and could subject us to securities class action litigation.

***If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our share price and trading volume could decline.***

The trading market for our common stock will depend on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. There can be no assurance that analysts will cover us or provide favorable coverage. If one or more of the analysts who cover us downgrade our stock or change their opinion of our stock, our share price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

***Provisions in our corporate charter documents and under Delaware law could make an acquisition of our company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.***

Provisions in our certificate of incorporation and our bylaws may discourage, delay or prevent a merger, acquisition or other change in control of our company that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions provide that:

- the authorized number of directors can be changed only by resolution of our board of directors;
- our bylaws may be amended or repealed by our board of directors or our stockholders;
- stockholders may not call special meetings of the stockholders or fill vacancies on the board of directors;
- our board of directors is authorized to issue, without stockholder approval, preferred stock, the rights of which will be determined at the discretion of the board of directors and that, if issued, could operate as a “poison pill” to dilute the stock ownership of a potential hostile acquirer to prevent an acquisition that our board of directors does not approve;
- our stockholders do not have cumulative voting rights, and therefore our stockholders holding a majority of the shares of common stock outstanding will be able to elect all of our directors; and
- our stockholders must comply with advance notice provisions to bring business before or nominate directors for election at a stockholder meeting.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the DGCL which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

***We have never paid any cash dividends and have no plans to pay any cash dividends in the future.***

Holders of shares of our common stock are entitled to receive such dividends as may be declared by our board of directors. To date, we have paid no cash dividends on our shares of our preferred or common stock and we do not expect to pay cash dividends in the foreseeable future. In addition, the declaration and payment of cash dividends is restricted under the terms of our existing Loan Agreement. We intend to retain future earnings, if any, to provide funds for operations of our business. Therefore, any return investors

in our preferred or common stock may have will be in the form of appreciation, if any, in the market value of their shares of common stock.

### **Risks Related to this Offering**

***If you purchase our securities in this offering, you may incur immediate and substantial dilution in the book value of your shares.***

The public offering price per unit may be substantially higher than the net tangible book value per share of our common stock immediately prior to the offering. After giving effect to the assumed sale of 70,000,000 units in this offering, at an assumed public offering price of \$0.1372 per unit and after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us and attributing no value to the warrants sold in this offering, purchasers of our common stock in this offering will incur immediate dilution of \$(0.0844) per share in the net tangible book value of the common stock they acquire. In the event that you exercise your warrants, you may experience additional dilution to the extent that the exercise price of the warrants is higher than the tangible book value per share of our common stock. For a further description of the dilution that investors in this offering may experience, see "Dilution." In addition, to the extent that outstanding stock options or warrants have been or may be exercised or other shares issued, you may experience further dilution.

***You will be unable to exercise the warrants and they may have no value under certain circumstances.***

We currently do not have authorized shares available to permit exercise of the warrants. Therefore, the warrants will not be exercisable until we obtain stockholder approval to effect an increase in our authorized shares of common stock or a reverse stock split in an amount sufficient to permit exercise in full of the warrants. If we are unable to obtain such stockholder approval, the warrants will have no value and will expire. In no event may the warrants be net cash settled. Our prior efforts to obtain stockholder approval of a reverse split were not successful. Certain investors in this offering will enter into a lock-up and voting agreement whereby each such investor will be subject to a lock-up period through the closing of this offering and will vote all shares of common stock they beneficially own on the closing date of this offering with respect to any proposals presented to the stockholders of the Company at the Company's next meeting of its stockholders, including the contemplated reverse split proposal. However, existing holders of common stock may have an incentive to vote against the proposal for an increase in our authorized shares of common stock or a reverse stock split to prevent dilution in their interests by the shares underlying the warrants. Furthermore, in the event that the price of a share of our common stock does not exceed the exercise price of the warrants during their exercise period, the warrants may not have any value.

***We have broad discretion in the use of the net proceeds we receive from this offering and may not use them effectively.***

Our management will have significant discretion and flexibility in applying the net proceeds of this offering that are not allocated to payment of outstanding debt and other financial obligations. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the net proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for us. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

***There is no public market for the warrants to purchase shares of our common stock being offered in this offering.***

There is no established public trading market for the warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the warrants on any national securities exchange or other nationally recognized trading system, including The Nasdaq Capital Market. Without an active trading market, the liquidity of the warrants will be limited.

***The warrants purchased in this offering do not entitle the holder to any rights as common stockholders until the holder exercises the warrant for shares of our common stock.***

Until you acquire shares of our common stock upon exercise of your warrants purchased in this offering, such warrants will not provide you any rights as a common stockholder, except as set forth therein. Upon exercise of your warrants purchased in this offering, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs on or after the exercise date.

**CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This prospectus contains “forward-looking statements” that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, strategy and plans, and our expectations for future operations, are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. We have attempted to identify forward-looking statements by terminology including “anticipates,” “believes,” “can,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “potential,” “predicts,” “should,” or “will” or the negative of these terms or other comparable terminology. Although we do not make forward looking statements unless we believe we have a reasonable basis for doing so, we cannot guarantee their accuracy. Forward-looking statements included or incorporated by reference in this prospectus or our other filings with the Securities and Exchange Commission, or the SEC, include, but are not necessarily limited to, those relating to uncertainties relating to:

- the ability to raise capital when needed;
- financing and strategic agreements and relationships;
- difficulties or delays in the regulatory approval process;
- uncertainties relating to manufacturing, sales, marketing and distribution of our drug candidates that may be successfully developed and approved for commercialization;
- adverse side effects or inadequate therapeutic efficacy of our drug candidates that could slow or prevent product development or commercialization;
- dependence on third party suppliers;
- the uncertainty of protection for our patents and other intellectual property or trade secrets; and
- competition.

These statements are only predictions and involve known and unknown risks, uncertainties and other factors, including the risks outlined under “Risk Factors” or elsewhere in this prospectus, which may cause our or our industry’s actual results, levels of activity, performance or achievements expressed or implied by these forward-looking statements.

Forward-looking statements should not be read as a guarantee of future performance or results, and will not necessarily be accurate indications of the times at, or by which, that performance or those results will be achieved. Forward-looking statements are based on information available at the time they are made and/or management’s good faith belief as of that time with respect to future events, and are subject to risks and uncertainties that could cause actual performance or results to differ materially from what is expressed in or suggested by the forward-looking statements.

Forward-looking statements speak only as of the date they are made. You should not put undue reliance on any forward-looking statements. We assume no obligation to update forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information, except to the extent required by applicable securities laws. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements. We caution you not to give undue weight to such projections, assumptions and estimates.

## USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of the securities offered by this prospectus in this offering will be approximately \$8.9 million (or \$9.8 million if the underwriters fully exercise their overallotment option) after deducting commissions and estimated offering expenses payable by us.

We currently intend to use the net proceeds from this offering for general corporate purposes, including the costs associated with winding down our commercial operations and funding our product development programs, as well as for the settlement of our outstanding indebtedness to Horizon and Molteni, for which we have allocated \$1.6 million of proceeds. We may use a portion of the net proceeds for the acquisitions of businesses, products, technologies or licenses that are complementary to our business, although we have no present commitments or agreements to do so other than the possible acquisition of certain intellectual property rights from JT Pharma described elsewhere in this prospectus.

The allocation of the net proceeds of the offering set forth above represents our estimates based upon our current plans and assumptions regarding industry and general economic conditions, our future revenues and expenditures. The amounts and timing of our actual expenditures may vary significantly and will depend on numerous factors, regulatory requirements, cash used by our operations, the extent to which we receive project funding from government grants and other third party collaborators and other business developments and opportunities that may arise. We may find it necessary or advisable to use portions of the proceeds from this offering for other purposes.

We believe that the net proceeds of this offering, together with cash on hand, will be sufficient to fund our operations for more than nine months, although we will need to raise additional capital to fund JT-09 beyond the proof of concept activities, which we expect to complete in the second quarter of 2021. Additional capital may not be available on terms favorable to us, or at all. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve restrictive covenants or additional security interests in our assets. Any additional debt or equity financing that we complete may contain terms that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or products or grant licenses on terms that are not favorable to us. If we are unable to raise adequate funds, we may have to delay, reduce the scope of, or eliminate some or all of, our development programs or liquidate some or all of our assets.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment grade, interest bearing instruments and U.S. government securities.

**DILUTION**

Purchasers of units in this offering will experience an immediate dilution of the net tangible book value per share of our common stock. Our net tangible book value as of June 30, 2020 was approximately \$1.6 million, or approximately \$0.0160 per share of our common stock. Net tangible book value per share is equal to our total tangible assets less our total liabilities, divided by the number of shares of our outstanding common stock. Dilution per share of common stock equals the difference between the amount paid by purchasers of common stock in this offering (ascribing no value to the warrants) and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the assumed sale by us of 70,000,000 units in this offering at an assumed public offering price of \$0.1372 per unit (the last reported sale price of our common stock on Nasdaq on October 23, 2020), after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us and the allocation of \$1.6 million to settle outstanding indebtedness, our as adjusted net tangible book value as of June 30, 2020 would have been approximately \$8.8 million, or approximately \$0.0528 per share. This represents an immediate increase in net tangible book value of approximately \$0.0368 per share to existing stockholders and an immediate decrease in net tangible book value of approximately \$0.0844 per share to new investors purchasing shares of our common stock and related warrants in this offering, attributing none of the assumed combined public offering price to the warrants offered hereby. The following table illustrates this per share dilution:

Assumed combined public offering price per unit	\$ 0.1372
Net tangible book value per share as of June 30, 2020	\$0.0160
Increase in net tangible book value per share after this offering	<u>0.0368</u>
As adjusted net tangible book value per share after this offering	0.0528
Dilution per share to new investors	<u><u>\$(0.0844)</u></u>

The information above is illustrative only and will change based on actual pricing and other terms of this offering determined at pricing.

The above discussion and table is as of June 30, 2020 and excludes, as of that date:

- 917,544 shares of our common stock issuable upon exercise of outstanding options with a weighted average exercise price of \$7.44 per share;
- 26,173,376 shares of our common stock issuable upon exercise of outstanding warrants with a weighted average exercise price of \$0.56 per share (inclusive of 8,700,000 warrants for which the underlying shares had not yet been authorized);
- 3,422,777 shares issuable upon conversion of a portion of our outstanding debt; and
- 842,054 additional shares of our common stock reserved for future issuance under our 2015 equity incentive plan.

The above discussion also does not reflect the sale of 19,440,000 shares of our common stock in a registered direct offering completed in September 2020.

## DESCRIPTION OF SECURITIES WE ARE OFFERING

As of the date of this prospectus, our certificate of incorporation authorizes us to issue 225,000,000 shares of common stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share. The following description of our capital stock is not complete and is subject to and qualified in its entirety by our certificate of incorporation, as amended, and bylaws, which are filed as exhibits to the registration statement of which this prospectus is a part, and by the relevant provisions of the Delaware General Corporation Law.

### Units

We are offering up to \_\_\_\_\_ units, with each unit consisting of one share of our common stock and a warrant to purchase one share of our common stock at an assumed public offering price of \$ \_\_\_\_\_ per unit. The shares of common stock and warrants are being sold in this offering only as part of the units. However, the units will not be certificated and the common stock and warrants comprising such units are immediately separable. Upon issuance, the shares of common stock and warrants may be transferred independent of one another, subject to applicable law and transfer restrictions.

### Common Stock

Each holder of common stock is entitled to one vote for each share of common stock held on all matters submitted to a vote of the stockholders, including the election of directors. Our certificate of incorporation and bylaws do not provide for cumulative voting rights. Subject to preferences that may be applicable to any then outstanding preferred stock, the holders of our outstanding shares of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock. Holders of our common stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that are outstanding or that we may designate and issue in the future. All of our outstanding shares of common stock are fully paid and nonassessable.

Our common stock is currently listed on The Nasdaq Capital Market under the trading symbol “TTNP.”

### Warrants

The following summary of certain terms and provisions of the warrants offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the warrant, the form of which has been filed as an exhibit to the registration statement of which this prospectus is a part. Prospective investors should carefully review the terms and provisions of the form of warrant for a complete description of the terms and conditions of the warrants.

Pursuant to a warrant agency agreement between us and Continental Stock Transfer & Trust Company, as warrant agent, the warrants will be issued in book-entry form and shall initially be represented only by one or more global warrants deposited with the warrant agent, as custodian on behalf of The Depository Trust Company, or DTC, and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC.

*Exercisability.* The warrants are exercisable on the date we file an amendment to our certificate of incorporation to reflect our stockholders’ approval of an increase in our authorized shares of common stock or a reverse stock split in an amount sufficient to permit the exercise in full of the warrants and will expire on the date that is five years after the warrants become exercisable. The warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice. In no event may the warrants be net cash settled.

*Stockholder Approval.* We have agreed to hold a stockholders meeting in order to seek stockholder approval for an amendment to our certificate of incorporation to effect an increase in our authorized shares of common stock or a reverse split of the common stock in an amount sufficient to permit the exercise in full of the warrants in accordance with their terms. In the event that we are unable to obtain stockholder approval and effect an increase in our authorized shares of common stock or effect a reverse split of our common stock, the warrants will not be exercisable and will have no value. In no event may the warrants be net cash settled.

*Exercise Limitation.* A holder will not have the right to exercise any portion of the warrant if the holder (together with its affiliates) would beneficially own in excess of 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants. However, any holder may increase or decrease such percentage, provided that any increase will not be effective until the 61st day after such election.

*Exercise Price.* The warrants will have an exercise price of \$ \_\_\_\_\_ per share ( \_\_\_\_\_ % of the per unit offering price). The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

*Cashless Exercise.* If, at the time a holder exercises its warrant, there is no effective registration statement registering, or the prospectus contained therein is not available for an issuance of the shares underlying the warrant to the holder, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the warrant.

*Transferability.* Subject to applicable laws, the warrants may be offered for sale, sold, transferred or assigned without our consent.

*Exchange Listing.* There is no established trading market for the warrants and we do not expect a market to develop. In addition, we do not intend to apply for the listing of the warrants on any national securities exchange or other trading market. Without an active trading market, the liquidity of the warrants will be limited.

*Fundamental Transactions.* If a fundamental transaction occurs, then the successor entity will succeed to, and be substituted for us, and may exercise every right and power that we may exercise and will assume all of our obligations under the warrants with the same effect as if such successor entity had been named in the warrant itself. If holders of our common stock are given a choice as to the securities, cash or property to be received in a fundamental transaction, then the holder shall be given the same choice as to the consideration it receives upon any exercise of the warrant following such fundamental transaction. Additionally, as more fully described in the warrant, in the event of certain fundamental transactions, the holders of the warrants will be entitled to receive consideration in an amount equal to the Black Scholes value of the warrants on the date of consummation of such transaction.

*Rights as a Stockholder.* Except as otherwise provided in the warrants or by virtue of such holder's ownership of shares of our common stock, the holder of a warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the warrant.

#### **Transfer Agent**

The transfer agent of our common stock being offered hereby is Continental Stock Transfer & Trust Company.

## UNDERWRITING

We have entered into an underwriting agreement with the underwriters named below with respect to the units described in this prospectus. Subject to certain conditions, we have agreed to sell to the underwriters, and the underwriters have agreed to purchase, the number of units set forth below opposite each underwriter's name. Maxim Group LLC is acting as the representatives of the underwriters.

Underwriter	Number of Units
Maxim Group LLC	
<b>Total</b>	

The underwriters are offering the units subject to their acceptance of the common stock and the warrants comprising the units from us and subject to prior sale. The underwriting agreement provides that the obligations of the underwriters to pay for and accept delivery of the shares of our common stock and related warrants offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of our common stock and related warrants if any such shares of our common stock and related warrants are taken.

### Overallotment Option

We have granted to the underwriters an option exercisable not later than 45 days after the date of this prospectus to purchase up to a number of additional shares of common stock and/or warrants equal to 10% of the number of shares of common stock sold in the primary offering (excluding any shares of common stock underlying the warrants issued in this offering and any shares of common stock issued upon any exercise of the underwriters' over-allotment option) and/or 10% of the warrants sold in the primary offering at the public offering price per share of common stock and the public offering price per warrant set forth on the cover page hereto less the underwriting discounts and commissions. The underwriters may exercise the option solely to cover overallotments, if any, made in connection with this offering. If any additional shares of common stock and/or warrants are purchased, the underwriters will offer these shares of common stock and/or warrants on the same terms as those on which the other securities are being offered.

### Underwriting Discounts and Expenses

The following table summarizes the underwriting discount and commission to be paid to the underwriters by us.

	Per Unit <sup>(1)</sup>	Total	Total with Full Exercise of Overallotment
Public offering price			
Underwriting discount to be paid to the underwriters by us (6.0%) <sup>(2)</sup>			
Proceeds to us (before expenses)			

- (1) The public offering price and underwriting discount corresponds, in respect of the units (i) a public offering price per share of common stock of \$[ ] (\$[ ] net of the underwriting discount) and (ii) a public offering price per warrant of \$[ ] (\$[ ] net of the underwriting discount).
- (2) We have also agreed to reimburse the accountable expenses of the representative, including legal fees, in this offering, up to a maximum of \$ .

We have agreed to pay the underwriters an aggregate fee equal to 6.0% of the gross proceeds of this offering and expect the net proceeds from this offering to be approximately \$8.9 million after deducting \$576,240 in underwriting commissions and \$100,000 in our other estimated offering expenses. We have also agreed to pay the underwriters an accountable expense allowance for certain of the underwriters' expenses

relating to the offering up to a maximum aggregate amount of \$50,000, including the underwriters' legal fees incurred in this offering.

#### **Right of First Refusal**

We have also agreed that if the securities are sold in accordance with the terms of this prospectus, the representative of the underwriters shall have a preferential right for a period of twelve (12) months from the commencement of sales of the offering to act as sole lead managing underwriter and sole book runner, for any securities (whether public or private offerings of debt or equity or any combination thereof) we or any subsidiary or successor may seek to sell whether with or without or through an underwriter, placement agent or broker-dealer and whether pursuant to registration under the Securities Act or otherwise. The representative's failure to exercise its preferential right with respect to any particular proposal shall not affect its preferential rights relative to future proposals. The representative shall have the right to designate any other agents or underwriters in any such financing and the economics in connection with a financing that will be split with any additional agent(s) or underwriter(s) will be determined at the sole discretion of the Representative.

#### **Indemnification**

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act.

#### **Lock-up Agreements**

We have agreed, subject to limited exceptions, for a period of the later of 90 days after the closing of this offering or the date we file an amendment to our certificate of incorporation to reflect our stockholders' approval of an increase in our authorized shares of common stock or a reverse stock split in an amount sufficient to permit the exercise in full of the warrants and our officers and directors have agreed, subject to limited exceptions, for a period of 180 days after the closing of this offering, not to offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise dispose of, directly or indirectly any shares of common stock or any securities convertible into or exchangeable for our common stock either owned as of the date of the underwriting agreement or thereafter acquired without the prior written consent of Maxim Group LLC. Maxim Group LLC may, in its sole discretion and at any time or from time to time before the termination of the lock-up period, without notice, release all or any portion of the securities subject to lock-up agreements.

#### **Price Stabilization, Short Positions and Penalty Bids**

In connection with the offering the underwriters may engage in stabilizing transactions, over-allotment transactions, syndicate covering transactions and penalty bids in accordance with Regulation M under the Exchange Act:

- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.
- Over-allotment involves sales by the underwriters of shares in excess of the number of shares the underwriters are obligated to purchase, which creates a syndicate short position. The short position may be either a covered short position or a naked short position. In a covered short position, the number of shares over-allotted by the underwriters is not greater than the number of shares that they may purchase in the over-allotment option. In a naked short position, the number of shares involved is greater than the number of shares in the over-allotment option. The underwriters may close out any covered short position by either exercising their over-allotment option and/or purchasing shares in the open market.
- Syndicate covering transactions involve purchases of the common stock in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of shares to close out the short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option. A naked short position occurs if the

underwriters sell more shares than could be covered by the over-allotment option. This position can only be closed out by buying shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there could be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering.

- Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the common stock originally sold by the syndicate member is purchased in a stabilizing or syndicate covering transaction to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of the common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. These transactions may be discontinued at any time.

Neither we nor the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our shares of common stock. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that any transaction, if commenced, will not be discontinued without notice.

### **Electronic Distribution**

This prospectus in electronic format may be made available on websites or through other online services maintained by the underwriters, or by their affiliates. Other than this prospectus in electronic format, the information on the underwriters' websites and any information contained in any other websites maintained by the underwriters is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the underwriters in their capacity as underwriters, and should not be relied upon by investors.

### **Other**

From time to time, the underwriters and/or their affiliates have provided, and may in the future provide, various investment banking and other financial services for us for which services it has received and, may in the future receive, customary fees.

Except for the services provided in connection with this offering and other than as described below, the underwriters have not provided any investment banking or other financial services during the 180-day period preceding the date of this prospectus.

In April 2020, we entered into an advisory agreement with Maxim Group LLC to provide general financial advisory and investment banking services. On September 28, 2020, we completed an offering of 19,440,000 shares of our common stock at a purchase price of \$0.14 per share. Maxim Group LLC acted as placement agent in connection with such transaction.

### **Offers Outside the United States**

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

**LEGAL MATTERS**

The validity of the securities offered hereby will be passed upon for us by Loeb & Loeb LLP, New York, New York. The underwriters are being represented by Ellenoff Grossman & Schole LLP, New York, New York.

**EXPERTS**

The financial statements as of and for the years ended December 31, 2019 and 2018 incorporated by reference in this prospectus supplement constituting a part of the registration statement on Form S-3 have been so incorporated in reliance on the report of OUM & Co. LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

**WHERE YOU CAN FIND ADDITIONAL INFORMATION**

We have filed with the Securities and Exchange Commission a registration statement on Form S-1 under the Securities Act with respect to the securities offered by this prospectus. This prospectus, which is part of the registration statement, omits certain information, exhibits, schedules and undertakings set forth in the registration statement. For further information pertaining to us and the securities offered hereby, reference is made to the registration statement and the exhibits and schedules to the registration statement. Statements contained in this prospectus as to the contents or provisions of any documents referred to in this prospectus are not necessarily complete, and in each instance where a copy of the document has been filed as an exhibit to the registration statement, reference is made to the exhibit for a more complete description of the matters involved.

You may read and copy all or any portion of the registration statement without charge at the public reference room of the Securities and Exchange Commission at 100 F Street, N.E., Washington, D.C. 20549. Copies of the registration statement may be obtained from the Securities and Exchange Commission at prescribed rates from the public reference room of the Securities and Exchange Commission at such address. You may obtain information regarding the operation of the public reference room by calling 1-800-SEC-0330. In addition, registration statements and certain other filings made with the Securities and Exchange Commission electronically are publicly available through the Securities and Exchange Commission's website at [www.sec.gov](http://www.sec.gov). The registration statement, including all exhibits and amendments to the registration statement, has been filed electronically with the Securities and Exchange Commission. You may also read all or any portion of the registration statement and certain other filings made with the Securities and Exchange Commission on our website at [www.heatbio.com](http://www.heatbio.com). The information contained in, and that can be accessed through, our website is not incorporated into and is not part of this prospectus.

We are subject to the information and periodic reporting requirements of the Exchange Act and, accordingly, are required to file annual reports containing financial statements audited by an independent public accounting firm, quarterly reports containing unaudited financial data, current reports, proxy statements and other information with the Securities and Exchange Commission. You will be able to inspect and copy such periodic reports, proxy statements and other information at the Securities and Exchange Commission's public reference room, the website of the Securities and Exchange Commission referred to above, and our website at [www.titanpharm.com](http://www.titanpharm.com). Except for the specific incorporated reports and documents listed above, no information available on or through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.

### INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is an important part of this prospectus, and later information that we file with the SEC will automatically update and supersede some of this information. We incorporate by reference the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, including filings made after the date of the initial registration statement, until we sell all of the shares covered by this prospectus or the sale of shares by us pursuant to this prospectus is terminated. In no event, however, will any of the information that we furnish to, pursuant to Item 2.02 or Item 7.01 of any Current Report on Form 8-K (including exhibits related thereto) or other applicable SEC rules, rather than file with, the SEC be incorporated by reference or otherwise be included herein, unless such information is expressly incorporated herein by a reference in such furnished Current Report on Form 8-K or other furnished document. The documents we incorporate by reference are:

- our Annual Report on Form 10-K/A for the year ended December 31, 2019, filed with the SEC on March 30, 2020;
- our Quarterly Report on Form 10-Q for the period ended March 31, 2020, filed with the SEC on May 15, 2020; our Quarterly Report on Form 10-Q for the period ended June 30, 2020, filed with the SEC on August 14, 2020;
- our Current Reports on Form 8-K filed with the SEC on April 24, 2020, June 25, 2020, June 29, 2020, July 16, 2020, August 5, 2020, August 12, 2020, August 13, 2020, August 20, 2020, September 1, 2020, September 14, 2020, September 18, 2020, September 24, 2020, October 15, 2020 and October 26, 2020;
- our Definitive Proxy Statement, filed with the SEC on May 22, 2020;
- our additional Definitive Proxy Materials filed with the SEC on June 19, 2020 and July 8, 2020;
- our Preliminary Proxy Statement, filed with the SEC on October 23, 2020; and
- the description of our common stock contained in our registration statement on Form 8-A (File No. 001-13341) filed under the Exchange Act on October 8, 2015, including any amendment or reports filed for the purpose of updating such descriptions.

Any statement contained in a document incorporated or deemed to be incorporated by reference into this prospectus supplement will be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus supplement modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement.

We will provide each person to whom a prospectus is delivered a copy of all of the information that has been incorporated by reference in this prospectus but not delivered with the prospectus. You may obtain copies of these filings, at no cost, through the “Investor Relations” section of our website ([www.titanpharm.com](http://www.titanpharm.com)) and you may request a copy of these filings (other than an exhibit to any filing unless we have specifically incorporated that exhibit by reference into the filing), at no cost, by writing or telephoning us at the following address:

400 Oyster Point Boulevard, Suite 505  
South San Francisco, CA 94080  
(650) 244-4990

Information on, or that can be accessed through, our website is not incorporated into this prospectus or other securities filings and is not a part of these filings.

**70,000,000 Units**

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**PROSPECTUS**

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**MAXIM GROUP LLC**

, 2020

Through and including \_\_\_\_\_, 2020 (25 days after commencement of this offering), all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to their unsold allotments or subscriptions.

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## PART II — INFORMATION NOT REQUIRED IN PROSPECTUS

**Item 13. Other Expenses of Issuance and Distribution**

We estimate that expenses in connection with the distribution described in this registration statement (other than fees and commissions charged by the underwriters) will be as set forth below. We will pay all of the expenses with respect to the distribution, and such amounts, with the exception of the SEC registration fee and the Financial Industry Regulatory Authority, Inc., or FINRA, filing fee, are estimates.

SEC registration fee	\$ 1,248.40
FINRA filing fee	2,216.41
Legal fees and expenses	50,000.00
Accounting fees and expenses	25,000.00
Underwriters' out-of-pocket expenses	50,000.00
Printing expenses	15,000.00
Other (including transfer agent and registrar fees)	6,535.19
<b>Total</b>	<u>\$150,000.00</u>

**Item 14. Indemnification of Directors and Officers**

Subsection (a) of Section 145 of the DGCL, empowers a corporation to indemnify any person who was or is a party or who is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful.

Subsection (b) of Section 145 empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Section 145 further provides that to the extent a director or officer of a corporation has been successful on the merits or otherwise in the defense of any action, suit or proceeding referred to in subsections (a) and (b) of Section 145, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith; that indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and the indemnification provided for by Section 145 shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of such person's heirs, executors and administrators. Section 145 also empowers the corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of

the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify such person against such liabilities under Section 145.

Section 102(b)(7) of the DGCL provides that a corporation's certificate of incorporation may contain a provision eliminating or limiting the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, provided that such provision shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit.

Our certificate of incorporation and our bylaws provide that we will indemnify our directors and officers to the fullest extent permitted by the DGCL, which prohibits our certificate of incorporation from limiting the liability of our directors for the following:

- any breach of the director's duty of loyalty to us or our stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- unlawful payment of dividends or unlawful stock repurchases or redemptions; or
- any transaction from which the director derived an improper benefit.

Our certificate of incorporation provides for indemnification of our directors and executive officers to the maximum extent permitted by the DGCL, and our bylaws provide for indemnification of our directors and executive officers to the maximum extent permitted by the DGCL.

We have entered into indemnification agreements with each of our current directors. These agreements will require us to indemnify these individuals to the fullest extent permitted under Delaware law against liabilities that may arise by reason of their service to us and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. We also intend to enter into indemnification agreements with our future directors and executive officers.

In any underwriting agreement we enter into in connection with the sale of common stock and pre-funded warrants being registered hereby, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us, within the meaning of the Securities Act, against certain liabilities.

#### **Item 15. Recent Sales of Unregistered Securities**

The following information sets forth certain information with respect to all unregistered securities which we have sold during the last three years:

In June 2019, we issued 448,287 shares of our common stock to L. Molteni & C. Dei Frattelli Alitti Società Di Esercizio S.P.A. upon the conversion of a convertible loan at conversion price of \$1.50 per share.

In August 2019, in connection with a concurrent registered direct offering to a single institutional investor, we issued warrants to purchase 2,852,314 shares of common stock at an exercise price of \$1.07 per share, which warrants are exercisable for a period of five years commencing February 9, 2020. Maxim Group LLC acted as the placement agent in connection with the offering and received a cash fee of 7.0% of the gross proceeds paid to us and reimbursement of certain out-of-pocket expenses.

In January 2020, in connection with a concurrent registered direct offering to a few institutional investors, we issued warrants to purchase 8,700,000 shares of common stock at an exercise price of \$0.25 per share, which warrants are exercisable for a period of five years commencing September 18, 2020. Maxim Group LLC acted as the placement agent in connection with the offering and received a cash fee of 7.0% of the gross proceeds paid to us and reimbursement of certain out-of-pocket expenses.

The offers, sales and issuances of the securities described above were exempt from registration under the Securities Act by virtue of Section 4(a)(2) of the Securities Act.

**Item 16. Exhibits**

Exhibit No.	Description
<u>1.1</u>	<u>Underwriting Agreement between Titan Pharmaceuticals, Inc. and Maxim Group LLC*</u>
<u>3.1.1</u>	<u>Amended and Restated Certificate of Incorporation of the Registrant, as amended<sup>(4)</sup></u>
<u>3.1.2</u>	<u>Certificate of Amendment to the Restated Certificate of Incorporation dated September 24, 2015<sup>(6)</sup></u>
<u>3.1.3</u>	<u>Certificate of Amendment to the Restated Certificate of Incorporation dated January 23, 2019<sup>(16)</sup></u>
<u>3.1.4</u>	<u>Certificate of Amendment to the Restated Certificate of Incorporation dated September 24, 2020<sup>(16)</sup></u>
<u>3.2</u>	<u>By-laws of the Registrant<sup>(11)</sup></u>
<u>4.1</u>	<u>Form of Lender Warrant<sup>(8)</sup></u>
<u>4.2</u>	<u>Form of Rights Agreement Warrant<sup>(10)</sup></u>
<u>4.3</u>	<u>Warrant Agency Agreement between Titan Pharmaceuticals, Inc. and Continental Stock Transfer &amp; Trust Company and Form of Offering Warrant<sup>(15)</sup></u>
<u>4.4</u>	<u>Representative's Purchase Warrant<sup>(15)</sup></u>
<u>4.5</u>	<u>Form of August 2019 Private Placement Warrant<sup>(17)</sup></u>
<u>4.6</u>	<u>Class B Warrant Agency Agreement dated October 16, 2019 between Titan Pharmaceuticals, Inc. and Maxim Group LLC Form of January 2020 Private Placement Warrant<sup>(18)</sup></u>
<u>4.7</u>	<u>Form of January 2020 Private Placement Warrant<sup>(19)</sup></u>
<u>4.8</u>	<u>Form of March 3, 2020 Warrant Amendment Agreement<sup>(23)</sup></u>
<u>4.9</u>	<u>Description of the Registrant's Common Stock<sup>(23)</sup></u>
<u>4.10</u>	<u>Warrant Agency Agreement between Titan Pharmaceuticals, Inc. and Continental Stock Transfer &amp; Trust Company and Form of Warrant</u>
<u>4.11</u>	<u>Form of Lock-Up and Voting Agreement</u>
<u>5.1</u>	<u>Opinion of Loeb &amp; Loeb LLP*</u>
<u>10.1</u>	<u>2001 Non-Qualified Employee Stock Option Plan<sup>(2)</sup></u>
<u>10.2</u>	<u>2002 Stock Option Plan<sup>(3)</sup></u>
<u>10.3</u>	<u>Titan Pharmaceuticals, Inc. 2014 Incentive Plan<sup>(5)</sup></u>
<u>10.4</u>	<u>Titan Pharmaceuticals, Inc. Third Amended and Restated 2015 Omnibus Equity Incentive Plan<sup>(16)</sup></u>
<u>10.5</u>	<u>Employment Agreement between Titan Pharmaceuticals, Inc. and Sunil Bhonsle<sup>(7)</sup></u>
<u>10.6</u>	<u>Employment Agreement between Titan Pharmaceuticals, Inc. and Marc Rubin<sup>(7)</sup></u>
<u>10.7</u>	<u>Venture Loan and Security Agreement, dated July 27, 2017, by and between Titan Pharmaceuticals, Inc. and Horizon Technology Finance Corporation<sup>(8)</sup></u>
<u>10.8</u>	<u>Amendment of Venture Loan and Security Agreement, dated February 2, 2018, by and between Titan Pharmaceuticals, Inc. and Horizon Technology Finance Corporation<sup>(9)</sup></u>
<u>10.9</u>	<u>Amended and Restated Venture Loan and Security Agreement, dated March 21, 2018, by and between Titan Pharmaceuticals, Inc., Horizon Technology Finance Corporation and L. Molteni &amp; C. Dei Fratelli Alitti Società Di Esercizio S.P.A.<sup>(10)</sup></u>
<u>10.10 ±</u>	<u>Asset Purchase, Supply and Support Agreement dated March 21, 2018, by and between Titan Pharmaceuticals, Inc. and L. Molteni &amp; C. Dei Fratelli Alitti Società Di Esercizio S.P.A.<sup>(10)</sup></u>

Exhibit No.	Description
<a href="#">10.11</a>	<a href="#">Rights Agreement dated March 21, 2018, by and between Titan Pharmaceuticals, Inc. and L. Molteni &amp; C. Dei Frattelli Alitti Società Di Esercizio S.P.A.</a> <sup>(10)</sup>
<a href="#">10.12 ±</a>	<a href="#">Termination and Transition Services Agreement dated May 25, 2018 by and between Titan Pharmaceuticals, Inc. and Braeburn Pharmaceuticals, Inc.</a> <sup>(11)</sup>
<a href="#">10.13 ±</a>	<a href="#">Amendment to Asset Purchase, Supply and Support Agreement dated August 3, 2018, by and between Titan Pharmaceuticals, Inc. and L. Molteni &amp; C. Dei Frattelli Alitti Società Di Esercizio S.P.A.</a> <sup>(12)</sup>
<a href="#">10.14 ±</a>	<a href="#">Distribution and Sublicense Agreement dated February 1, 2016 as amended by agreement dated August 2, 2018 between Titan Pharmaceuticals, Inc. and Knight Therapeutics Inc.</a> <sup>(13)</sup>
<a href="#">10.15</a>	<a href="#">Amendment to lease for Registrant's facility dated March 21, 2016</a> <sup>(13)</sup>
<a href="#">10.16</a>	<a href="#">Unsecured Convertible Loan Agreement dated September 18, 2018</a> <sup>(14)</sup>
<a href="#">10.17</a>	<a href="#">Employment Agreement between the Registrant and Katherine Beebe DeVarney</a> <sup>(20)</sup>
<a href="#">10.18</a>	<a href="#">Employment Agreement between the Registrant and Dane Hallberg</a> <sup>(20)</sup>
<a href="#">10.19</a>	<a href="#">Securities Purchase Agreement, dated August 7, 2019, by and between Titan Pharmaceuticals, Inc. and the investors named therein</a> <sup>(17)</sup>
<a href="#">10.20</a>	<a href="#">Securities Purchase Agreement, dated January 7, 2020, by and between Titan Pharmaceuticals, Inc. and the investors named therein</a> <sup>(19)</sup>
<a href="#">10.21</a>	<a href="#">Placement Agency Agreement, dated August 7, 2019, by and between Titan Pharmaceuticals, Inc. and Maxim Group LLC</a> <sup>(17)</sup>
<a href="#">10.22</a>	<a href="#">Placement Agency Agreement, dated January 7, 2020, by and between Titan Pharmaceuticals, Inc. and Maxim Group LLC</a> <sup>(19)</sup>
<a href="#">10.23</a>	<a href="#">Amendment dated September 10, 2019 to Amended and Restated Venture Loan and Security Agreement, dated March 21, 2018, by and between Titan Pharmaceuticals, Inc., Horizon Technology Finance Corporation and L. Molteni &amp; C. Dei Frattelli Alitti Società Di Esercizio S.P.A.</a> <sup>(21)</sup>
<a href="#">10.24 ±</a>	<a href="#">Amendment No. 2 dated September 10, 2019 to Asset Purchase, Supply and Support Agreement by and between Titan Pharmaceuticals, Inc. and L. Molteni &amp; C. Dei Frattelli Alitti Società Di Esercizio S.P.A.</a> <sup>(21)</sup>
<a href="#">10.25</a>	<a href="#">Amendment No. 2 dated March 12, 2020 to Amended and Restated Venture Loan and Security Agreement, dated March 21, 2018, by and between Titan Pharmaceuticals, Inc., Horizon Technology Finance Corporation and L. Molteni &amp; C. Dei Frattelli Alitti Società Di Esercizio S.P.A.</a> <sup>(22)</sup>
<a href="#">10.26 ±±</a>	<a href="#">Agreement for Co-Promotion Partnership, dated June 23, 2020, by and between Titan Pharmaceuticals, Inc. and Indegene, Inc.</a> <sup>(23)</sup>
<a href="#">10.27</a>	<a href="#">Debt Settlement and Release Agreement by and between Titan Pharmaceuticals, Inc., Horizon Technology Finance Corporation and L. Molteni &amp; C. Dei Frattelli Alitti Società Di Esercizio S.P.A.</a> <sup>(24)</sup>
<a href="#">14.1</a>	<a href="#">Code of Business Conduct and Ethics</a> <sup>(5)</sup>
<a href="#">23.1</a>	<a href="#">Consent of OUM &amp; Co., LLP, Independent Registered Public Accounting Firm*</a>
<a href="#">23.2</a>	<a href="#">Consent of Loeb &amp; Loeb LLP (contained in Exhibit 5.1)*</a>
<a href="#">24.1</a>	<a href="#">Power of Attorney (included on the signature page of this Registration Statement)*</a>

\* Previously filed.

± Confidential treatment has been granted as to certain portions of this exhibit.

±± Certain information has been omitted from this exhibit in reliance upon Item 601(b)(10) of Regulation S-K.

- (1) Incorporated by reference from the Registrant's Registration Statement on Form S-3 (File No. 333-221126).
- (2) Incorporated by reference from the Registrant's Annual Report on Form 10-K for the year ended December 31, 2001.
- (3) Incorporated by reference from the Registrant's Annual Report on Form 10-K for the year ended December 31, 2002.
- (4) Incorporated by reference from the Registrant's Registration Statement on Form 10 filed on January 14, 2010.
- (5) Incorporated by reference from the Registrant's Annual Report on Form 10-K for the year ended December 31, 2013.
- (6) Incorporated by reference from the Registrant's Current Report on Form 8-K filed on September 28, 2015.
- (7) Incorporated by reference from the Registrant's Current Report on Form 8-K filed on April 3, 2019.
- (8) Incorporated by reference from the Registrant's Current Report on Form 8-K filed on July 27, 2017.
- (9) Incorporated by reference from the Registrant's Current Report on Form 8-K filed on February 7, 2018.
- (10) Incorporated by reference from the Registrant's Current Report on Form 8-K filed on March 26, 2018.
- (11) Incorporated by reference from the Registrant's Current Report on Form 8-K filed on May 30, 2018.
- (12) Incorporated by reference from the Registrant's Current Report on Form 8-K filed on August 3, 2018.
- (13) Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2018.
- (14) Incorporated by reference from the Registrant's Current Report on Form 8-K dated September 20, 2018.
- (15) Incorporated by reference from the Registrant's Current Report on Form 8-K dated September 25, 2018.
- (16) Incorporated by reference from the Registrant's Current Report on Form 8-K dated January 25, 2019.
- (17) Incorporated by reference from the Registrant's Current Report on Form 8-K dated August 8, 2019.
- (18) Incorporated by reference from the Registrant's Current Report on Form 8-K dated October 18, 2019.
- (19) Incorporated by reference from the Registrant's Current Report on Form 8-K dated January 7, 2020.
- (20) Incorporated by reference from the Registrant's Annual Report on Form 10-K dated April 1, 2019.
- (21) Incorporated by reference from the Registrant's Registration Statement on Form S-1 dated September 12, 2019.
- (22) Incorporated by reference from the Registrant's Annual Report on Form 10-K dated March 30, 2020.
- (23) Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q for the period ended June 30, 2020.
- (24) Incorporated by reference from the Registrant's Current Report on Form 8-K dated October 26, 2020.

**ITEM 17. UNDERTAKINGS**

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933 (the "Securities Act");

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration

statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, however, that Paragraphs (a)(1)(i), (ii), and (iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser: If the registrant is subject to Rule 430C (§230.430C of this chapter), each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A (§230.430A of this chapter), shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424 (§230.424 of this chapter);

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual

report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) The undersigned registrant hereby undertakes to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.

(d) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Company pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(e) For the purpose of determining any liability under the Securities Act, the registrant will treat the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant under Rule 424(b)(1), or (4), or 497(h) under the Securities Act as part of this registration statement as of the time the Commission declared it effective.

(f) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this Registration Statement on Form S-1 or amendment thereto to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of South San Francisco, State of California, this October 27, 2020.

TITAN PHARMACEUTICALS, INC.

By: /s/ Kate DeVarney, Ph.D.

Name: Kate DeVarney, Ph.D.

Title: President and Chief Operating Officer

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Marc Rubin, M.D.</u> Marc Rubin, M.D.	Executive Chairman (principal executive officer and principal financial officer)	October 27, 2020
<u>/s/ Kate DeVarney, Ph.D.</u> Kate DeVarney, Ph.D.	President, Chief Operating Officer and Director	October 27, 2020
<u>*</u> Joseph A. Akers	Director	October 27, 2020
<u>/s/ Sunil Bhonsle</u> Sunil Bhonsle	Director	October 27, 2020
<u>*</u> M. David MacFarlane, Ph.D.	Director	October 27, 2020
<u>*</u> James R. McNab, Jr.	Director	October 27, 2020
<u>*</u> Scott A. Smith	Director	October 27, 2020
<u>/s/ Brian E. Crowley</u> Brian E. Crowley	Vice President, Finance (principal accounting officer)	October 27, 2020

\* By: Kate DeVarney, Ph.D.  
Kate DeVarney, Ph.D.,  
*Attorney-in-fact*

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Titan Pharmaceuticals, Inc.

and

Continental Stock Transfer & Trust Company, as

Warrant Agent

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Warrant Agency Agreement

Dated as of \_\_\_\_\_, 2020

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WARRANT AGENCY AGREEMENT

WARRANT AGENCY AGREEMENT, dated as of \_\_\_\_\_, 2020 (“Agreement”), between Titan Pharmaceuticals, Inc., a Delaware corporation (the “Company”), and Continental Stock Transfer & Trust Company, a New York corporation (the “Warrant Agent”).

W I T N E S S E T H

WHEREAS, pursuant to an offering by the Company (the “Offering”), the Company will issue up to \_\_\_\_\_ shares of common stock, par value \$0.001 per share (the “Common Stock”), of the Company and up to \_\_\_\_\_ Warrants to purchase \_\_\_\_\_ shares of Common Stock (the “Warrants” and such shares of Common Stock issuable upon exercise of the Warrants, the “Warrant Shares”) at a price of \$ \_\_\_\_\_ per unit; and

WHEREAS, the Company granted an over-allotment option to purchase up to 10% of the aggregate number of Shares and/or Warrants sold, including warrants to purchase an additional \_\_\_\_\_ shares of Common Stock (the “Over-Allotment Option”) to the Underwriters; and

WHEREAS, upon the terms and subject to the conditions hereinafter set forth and pursuant to an effective registration statement on Form S-1, as amended (File No. 333-249550) (the “Registration Statement”), and the terms and conditions of the Warrant Certificate, the Company wishes to issue the Warrants in book entry form entitling the respective holders of the Warrants (the “Holders,” which term shall include a Holder’s transferees, successors and assigns and “Holder” shall include, if the Warrants are held in “street name,” a Participant (as defined below) or a designee appointed by such Participant) to, upon exercise, the Warrant Shares; and

WHEREAS, the shares of Common Stock and Warrants to be issued in connection with the Offering shall be issued separately, but will be purchased together in the Offering; and

WHEREAS, the Company wishes the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing so to act, in connection with the issuance, registration, transfer, exchange, exercise and replacement of the Warrants and, in the Warrant Agent’s capacity as the Company’s transfer agent, the delivery of the Warrant Shares.

NOW, THEREFORE, in consideration of the premises and the mutual agreements herein set forth, the parties hereby agree as follows:

Section 1. Certain Definitions. For purposes of this Agreement, the following terms have the meanings indicated:

(a) “Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which the New York Stock Exchange is authorized or required by law or other governmental action to close.

(b) “Close of Business” on any given date means 5:00 p.m., New York City time, on such date; provided, however, that if such date is not a Business Day it means 5:00 p.m., New York City time, on the next succeeding Business Day.

(c) “Person” means an individual, corporation, association, partnership, limited liability company, joint venture, trust, unincorporated organization, government or political subdivision thereof or governmental agency or other entity.

(d) “Warrant Certificate” means a certificate issued to a Holder, representing such number of Warrant Shares as is indicated therein, provided that any reference to the delivery of a Warrant Certificate in this Agreement shall include delivery of a Definitive Certificate or a Global Warrant (each as defined below).

All other capitalized terms used but not otherwise defined herein shall have the meaning ascribed to such terms in the Warrant Certificate.

Section 2. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company in accordance with the terms and conditions hereof, and the Warrant Agent hereby accepts such appointment. The Company may from time to time appoint a Co-Warrant Agent as it may, in its sole discretion, deem necessary or desirable. The Warrant Agent shall have no duty to supervise, and will in no event be liable for the acts or omissions of, any co-Warrant Agent.

Section 3. Global Warrants.

(a) The Warrants shall be issuable in book entry form (the "Global Warrants"). All of the Warrants shall initially be represented by one or more Global Warrants deposited with the Warrant Agent and registered in the name of Cede & Co., a nominee of The Depository Trust Company (the "Depository"), or as otherwise directed by the Depository. Ownership of beneficial interests in the Warrants shall be shown on, and the transfer of such ownership shall be effected through, records maintained by (i) the Depository or its nominee for each Global Warrant or (ii) institutions that have accounts with the Depository (such institution, with respect to a Warrant in its account, a "Participant").

(b) If the Depository subsequently ceases to make its book-entry settlement system available for the Warrants, the Company may instruct the Warrant Agent regarding other arrangements for book-entry settlement. In the event that the Warrants are not eligible for, or it is no longer necessary to have the Warrants available in, book-entry form, the Warrant Agent shall provide written instructions to the Depository to deliver to the Warrant Agent for cancellation each Global Warrant, and the Company shall instruct the Warrant Agent to deliver to each Holder a Warrant Certificate.

(c) A Holder has the right to elect at any time or from time to time a Warrant Exchange (as defined below) pursuant to a Warrant Certificate Request Notice (as defined below). Upon written notice by a Holder to the Warrant Agent for the exchange of some or all of such Holder's Global Warrants for a Warrant Certificate (such separate certificate, a "Definitive Certificate") evidencing the same number of Warrants, which request shall be in the form attached hereto as Annex A (a "Warrant Certificate Request Notice") and the date of delivery of such Warrant Certificate Request Notice by the Holder, the "Warrant Certificate Request Notice Date" and the deemed surrender upon delivery by the Holder of a number of Global Warrants for the same number of Warrants evidenced by a Warrant Certificate, a "Warrant Exchange"), the Warrant Agent shall promptly effect the Warrant Exchange and shall promptly issue and deliver to the Holder a Definitive Certificate for such number of Warrants in the name set forth in the Warrant Certificate Request Notice. Such Definitive Certificate shall be dated the original issue date of the Warrants, shall be manually executed by an authorized signatory of the Company and shall be in the form attached hereto as Exhibit 1. In connection with a Warrant Exchange, the Company agrees to deliver, or to direct the Warrant Agent to deliver, the Definitive Certificate to the Holder within three (3) Business Days of the Warrant Certificate Request Notice pursuant to the delivery instructions in the Warrant Certificate Request Notice ("Warrant Certificate Delivery Date"). The Company covenants and agrees that, upon the date of delivery of the Warrant Certificate Request Notice, the Holder shall be deemed to be the holder of the Definitive Certificate and, notwithstanding anything to the contrary set forth herein, the Definitive Certificate shall be deemed for all purposes to contain all of the terms and conditions of the Warrants evidenced by such Warrant Certificate and the terms of this Agreement, other than Section 3(c) and 3(d), which shall not apply to the Warrants evidenced by a Definitive Certificate. Notwithstanding anything herein to the contrary, the Company shall act as warrant agent with respect to any Definitive Certificate requested and issued pursuant to this section. Notwithstanding anything to the contrary contained in this Agreement, in the event of inconsistency between any provision in this Agreement and any provision in a Definitive Certificate, as it may from time to time be amended, the terms of such Definitive Certificate shall control.

(d) A Holder of a Definitive Certificate (pursuant to a Warrant Exchange or otherwise) has the right to elect at any time or from time to time a Global Warrants Exchange (as defined below) pursuant to a Global Warrants Request Notice (as defined below). Upon written notice by a Holder to the Company for the exchange of some or all of such Holder's Warrants evidenced by a Definitive Certificate for a beneficial interest in Global Warrants held in book-entry form through the Depository evidencing the same number of Warrants, which request shall be in the form attached hereto as Annex B (a "Global Warrants Request Notice") and the date of delivery of such Global Warrants Request Notice by the Holder, the "Global Warrants Request Notice Date" and the surrender upon delivery by the Holder of the Warrants evidenced by Definitive Certificates for the same number of Warrants evidenced by a beneficial interest in Global Warrants held in book-entry form through the Depository, a "Global Warrants Exchange"), the Company shall promptly effect the Global Warrants Exchange and shall promptly direct the Warrant Agent to issue and deliver to the Holder Global Warrants for such number of Warrants in the Global Warrants Request Notice, which beneficial interest in such Global Warrants shall be delivered by the Depository's Deposit or Withdrawal at Custodian system to the Holder pursuant to the instructions in the Global Warrants Request Notice. In connection with a Global Warrants Exchange, the Company shall direct the Warrant Agent to deliver the beneficial interest in such Global Warrants to the Holder within ten (10) Business Days of the Global Warrants Request Notice pursuant to the delivery instructions in the Global Warrant Request Notice ("Global Warrants Delivery Date"). The Company covenants and agrees that, upon the date of delivery of the Global Warrants Request Notice, the Holder shall be deemed to be the beneficial holder of such Global Warrants.

Section 4. Form of Warrant. The Warrants, together with the form of election to purchase Common Stock (the "Exercise Notice") and the form of assignment to be printed on the reverse thereof, whether a Warrant Certificate or a Global Warrant, shall be substantially in the form of Exhibit 1 hereto.

Section 5. Countersignature and Registration. The Warrant Certificates shall be executed on behalf of the Company by its Chief Executive Officer or Chief Financial Officer, either manually or by facsimile signature, and have affixed thereto the Company's seal or a facsimile thereof which shall be attested by the Secretary or an Assistant Secretary of the Company, either manually or by facsimile signature. The Warrant Certificates shall be countersigned by the Warrant Agent either manually or by facsimile signature and shall not be valid for any purpose unless so countersigned. In case any officer of the Company who shall have signed a Warrant shall cease to be such officer of the Company before countersignature by the Warrant Agent and issuance and delivery by the Company, such Warrant, nevertheless, may be countersigned by the Warrant Agent, issued and delivered with the same force and effect as though the person who signed such Warrant had not ceased to be such officer of the Company; and any Warrant may be signed on behalf of the Company by any person who, at the actual date of the execution of such Warrant, shall be a proper officer of the Company to sign such Warrant, although at the date of the execution of this Warrant Agreement any such person was not such an officer.

The Warrant Agent will keep or cause to be kept, at one of its offices, or at the office of one of its agents, books for registration and transfer of the Warrant Certificates issued hereunder. Such books shall show the names and addresses of the respective Holders of the Warrant Certificates, the number of warrants evidenced on the face of each of such Warrant Certificate and the date of each of such Warrant Certificate. The Warrant Agent will create a special account for the issuance of Warrant Certificates.

Section 6. Transfer, Split Up, Combination and Exchange of Warrant Certificates; Mutilated, Destroyed, Lost or Stolen Warrant Certificates Subject to the provisions of the Warrant and the last sentence of this first paragraph of Section 6 and subject to applicable law, rules or regulations, or any "stop transfer" instructions the Company may give to the Warrant Agent, at any time after the closing date of the Offering, and at or prior to the Close of Business on the Termination Date, any Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants may be transferred, split up, combined or exchanged for another Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants, entitling the Holder to purchase a like number of shares of Common Stock as the Warrant Certificate or Warrant Certificates or Global Warrant or Global Warrants surrendered then entitled such Holder to purchase. Any Holder desiring to transfer, split up, combine or exchange any Warrant Certificate or Global Warrant shall make such request in writing delivered to the Warrant Agent, and shall surrender the Warrant Certificate or Warrant Certificates to be transferred, split up, combined or exchanged at the principal office of the Warrant Agent, provided that no such surrender is applicable to the Holder of a Global Warrant. Any requested transfer of Warrants, whether a Global Warrant or a Warrant Certificate, shall be accompanied by reasonable evidence of authority of the party making such request that may be required by the Warrant Agent. Thereupon the Warrant Agent shall, subject to the last sentence of this first paragraph of Section 6, countersign and deliver to the Person entitled thereto any Warrant Certificate or Global Warrant, as the case may be, as so requested. The Company may require payment from the Holder of a sum sufficient to cover any tax or governmental charge that may be imposed in connection with any transfer, split up, combination or exchange of Warrants. The Company shall compensate the Warrant Agent per the fee schedule mutually agreed upon by the parties hereto and provided separately on the date hereof.

Upon receipt by the Warrant Agent of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of a Warrant Certificate, which evidence shall include an affidavit of loss, or in the case of mutilated certificates, the certificate or portion thereof remaining, and, in case of loss, theft or destruction, of indemnity in customary form and amount, and satisfaction of any other reasonable requirements established by Section 8-405 of the Uniform Commercial Code as in effect in the State of Delaware, and reimbursement to the Company and the Warrant Agent of all reasonable expenses incidental thereto, and upon surrender to the Warrant Agent and cancellation of the Warrant Certificate if mutilated, the Company will make and deliver a new Warrant Certificate of like tenor to the Warrant Agent for delivery to the Holder in lieu of the Warrant Certificate so lost, stolen, destroyed or mutilated.

Section 7. Exercise of Warrants; Exercise Price; Termination Date.

(a) The Warrants shall be exercisable commencing on the Initial Exercise Date. The Warrants shall cease to be exercisable and shall terminate and become void, and all rights thereunder and under this Agreement shall cease, at or prior to the Close of Business on the Termination Date. Subject to the foregoing and to Section 7(b) below, the Holder of a Warrant may exercise the Warrant in whole or in part upon providing the items required by Section 7(c) below to the Warrant Agent at the principal office of the Warrant Agent or to the office of one of its agents as may be designated by the Warrant Agent from time to time. In the case of the Holder of a Global Warrant, the Holder shall deliver the executed Exercise Notice and payment of the Exercise Price pursuant to Section 2(a) of the Warrant. Notwithstanding any other provision in this Agreement, a holder whose interest in a Global Warrant is a beneficial interest in a Global Warrant held in book-entry form through the Depository (or another established clearing corporation performing similar functions), shall effect exercises by delivering to the Depository (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by the Depository (or such other clearing corporation, as applicable). The Company acknowledges that the bank accounts maintained by the Warrant Agent in connection with the services provided under this Agreement will be in its name and that the Warrant Agent may receive investment earnings in connection with the investment at Warrant Agent risk and for its benefit of funds held in those accounts from time to time. Neither the Company nor the Holders will receive interest on any deposits or Exercise Price.

(b) Upon receipt of an Exercise Notice for a cashless exercise pursuant to Section 2(c) of the Warrant (each, a ‘Cashless Exercise’), the Company will promptly calculate and transmit to the Warrant Agent the number of Warrant Shares issuable in connection with such Cashless Exercise and deliver a copy of the Exercise Notice to the Warrant Agent, which shall issue such number of Warrant Shares in connection with such Cashless Exercise.

(c) Upon the Warrant Agent’s receipt, at or prior to the Close of Business on the Termination Date set forth in a Warrant, of the executed Exercise Notice, accompanied by payment of the Exercise Price pursuant to Section 2(a) of the Warrant, the shares to be purchased (other than in the case of a Cashless Exercise), an amount equal to any applicable tax, governmental charge or expense reimbursement referred to in Section 6 in cash, or by certified check or bank draft payable to the order of the Company and, in the case of an exercise of a Warrant in the form of a Warrant Certificate for all of the Warrant Shares represented thereby, the Warrant Certificate, the Warrant Agent shall cause the Warrant Shares underlying such Warrant to be delivered to or upon the order of the Holder of such Warrant, registered in such name or names as may be designated by such Holder, no later than the Warrant Share Delivery Date. If the Company is then a participant in the DWAC system of the Depository and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) the Warrant is being exercised via Cashless Exercise, then the certificates for Warrant Shares shall be transmitted by the Warrant Agent to the Holder by crediting the account of the Holder’s broker with the Depository through its DWAC system. Notwithstanding anything else to the contrary in this Agreement, except in the case of a Cashless Exercise, if any Holder fails to duly deliver payment to the Warrant Agent of an amount equal to the aggregate Exercise Price of the Warrant Shares to be purchased upon exercise of such Holder’s Warrant as set forth in Section 7(a) hereof, the Warrant Agent will not be obligated to deliver certificates representing any such Warrant Shares (via DWAC or otherwise) until following receipt of such payment, and the applicable Warrant Share Delivery Date shall be deemed extended by one day for each day (or part thereof) until such payment is delivered to the Warrant Agent.

(d) The Warrant Agent shall deposit all funds received by it in payment of the Exercise Price for all Warrants in the account of the Company maintained with the Warrant Agent for such purpose (or to such other account as directed by the Company in writing) and shall advise the Company via telephone at the end of each day on which funds for the exercise of any Warrant are received of the amount so deposited to its account. The Warrant Agent shall promptly confirm such telephonic advice to the Company in writing.

(e) In case the Holder of any Warrant Certificate exercises fewer than all Warrants evidenced thereby and surrenders such Warrant Certificate in connection with such partial exercise, a new Warrant Certificate evidencing the number of Warrant Shares equivalent to the number of Warrant Shares remaining unexercised may be issued by the Warrant Agent to the Holder of such Warrant Certificate or to his duly authorized assigns in accordance with Section 2(d)(ii) of the Warrant, subject to the provisions of Section 6 hereof.

Section 8. Cancellation and Destruction of Warrant Certificates. All Warrant Certificates surrendered for the purpose of exercise, transfer, split up, combination or exchange shall, if surrendered to the Company or to any of its agents, be delivered to the Warrant Agent for cancellation or in canceled form, or, if surrendered to the Warrant Agent, shall be canceled by it, and no Warrant Certificates shall be issued in lieu thereof except as expressly permitted by any of the provisions of this Agreement. The Company shall deliver to the Warrant Agent for cancellation and retirement, and the Warrant Agent shall so cancel and retire, any other Warrant Certificate purchased or acquired by the Company otherwise than upon the exercise thereof. The Warrant Agent shall deliver all canceled Warrant Certificates to the Company, or shall, at the written request of the Company, destroy such canceled Warrant Certificates, and in such case shall deliver a certificate of destruction thereof to the Company, subject to any applicable law, rule or regulation requiring the Warrant Agent to retain such canceled certificates.

Section 9. Certain Representations: Reservation and Availability of Shares of Common Stock or Cash.

(a) This Agreement has been duly authorized, executed and delivered by the Company and, assuming due authorization, execution and delivery hereof by the Warrant Agent, constitutes a valid and legally binding obligation of the Company enforceable against the Company in accordance with its terms, and the Warrants have been duly authorized, executed and issued by the Company and, assuming due authentication thereof by the Warrant Agent pursuant hereto and payment therefor by the Holders as provided in the Registration Statement, constitute valid and legally binding obligations of the Company enforceable against the Company in accordance with their terms and entitled to the benefits thereof; in each case except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium and other similar laws relating to or affecting creditors' rights generally or by general equitable principles (regardless of whether such enforceability is considered in a proceeding in equity or at law).

(b) As of the date hereof and prior to the Offering, the authorized capital stock of the Company consists of (i) 225,000,000 shares of authorized Common Stock, of which [ ] shares of Common Stock are issued and outstanding, and (ii) 5,000,000 shares of authorized preferred stock of which 0 are issued and outstanding. As of the date hereof there are [ ] shares of Common Stock reserved for issuance upon exercise of the Warrants inclusive of any Warrants the Underwriter may acquire upon exercise of its over-allotment option described in the Registration Statement. Except as disclosed in the Registration Statement, there are no other outstanding obligations, warrants, options or other rights to subscribe for or purchase from the Company any class of capital stock of the Company.

(c) The Company covenants and agrees that it will cause to be reserved and kept available out of its authorized and unissued shares of Common Stock or its authorized and issued shares of Common Stock held in its treasury, free from preemptive rights, the number of shares of Common Stock that will be sufficient to permit the exercise in full of all outstanding Warrants.

(d) The Warrant Agent will create a special account for the issuance of Common Stock upon the exercise of Warrants.

(e) The Company further covenants and agrees that it will pay when due and payable any and all federal and state transfer taxes and charges which may be payable in respect of the original issuance or delivery of the Warrant Certificates or certificates evidencing Common Stock upon exercise of the Warrants. The Company shall not, however, be required to pay any tax or governmental charge which may be payable in respect of any transfer involved in the transfer or delivery of Warrant Certificates or the issuance or delivery of certificates for Common Stock in a name other than that of the Holder of the Warrant Certificate evidencing Warrants surrendered for exercise or to issue or deliver any certificate for shares of Common Stock upon the exercise of any Warrants until any such tax or governmental charge shall have been paid (any such tax or governmental charge being payable by the Holder of such Warrant Certificate at the time of surrender) or until it has been established to the Company's reasonable satisfaction that no such tax or governmental charge is due.

Section 10. Common Stock Record Date. Each Holder shall be deemed to have become the holder of record for the Warrant Shares pursuant to Section 2(d)(i) of the Warrants.

Section 11. Adjustment of Exercise Price, Number of Shares of Common Stock or Number of the Company Warrants. The Exercise Price, the number of shares covered by each Warrant and the number of Warrants outstanding are subject to adjustment from time to time as provided in Section 3 of the Warrant. In the event that at any time, as a result of an adjustment made pursuant to Section 3 of the Warrant, the Holder of any Warrant thereafter exercised shall become entitled to receive any shares of capital stock of the Company other than shares of Common Stock, thereafter the number of such other shares so receivable upon exercise of any Warrant shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to the shares contained in Section 3 of the Warrant, and the provisions of Sections 7, 11, 12 and 13 of this Agreement with respect to the shares of Common Stock shall apply on like terms to any such other shares. All Warrants originally issued by the Company subsequent to any adjustment made to the Exercise Price pursuant to the Warrant shall evidence the right to purchase, at the adjusted Exercise Price, the number of shares of Common Stock purchasable from time to time hereunder upon exercise of the Warrants, all subject to further adjustment as provided herein.

Section 12. Certification of Adjusted Exercise Price or Number of Shares of Common Stock. Whenever the Exercise Price or the number of shares of Common Stock issuable upon the exercise of each Warrant is adjusted as provided in Section 11 or 13, the Company shall (a) promptly prepare a certificate setting forth the Exercise Price of each Warrant as so adjusted, and a brief statement of the facts accounting for such adjustment, (b) promptly file with the Warrant Agent and with each transfer agent for the Common Stock a copy of such certificate and (c) instruct the Warrant Agent to send a brief summary thereof to each Holder of a Warrant.

Section 13. Fractional Shares of Common Stock.

(a) The Company shall not issue fractions of Warrants or distribute a Global Warrant or Warrant Certificates that evidence fractional Warrants. Whenever any fractional Warrant would otherwise be required to be issued or distributed, the actual issuance or distribution shall reflect a rounding of such fraction down to the nearest whole Warrant.

(b) The Company shall not issue fractions of shares of Common Stock upon exercise of Warrants or distribute stock certificates that evidence fractional shares of Common Stock. Whenever any fraction of a share of Common Stock would otherwise be required to be issued or distributed, the actual issuance or distribution in respect thereof shall be made in accordance with Section 2(d)(v) of the Warrant.

Section 14. Conditions of the Warrant Agent's Obligations. The Warrant Agent accepts its obligations herein set forth upon the terms and conditions hereof, including the following to all of which the Company agrees and to all of which the rights hereunder of the Holders from time to time of the Warrant shall be subject:

(a) Compensation and Indemnification. The Company agrees promptly to pay the Warrant Agent the compensation detailed on Exhibit 2 hereto for all services rendered by the Warrant Agent and to reimburse the Warrant Agent for reasonable out-of-pocket expenses (including reasonable counsel fees) incurred without gross negligence, bad faith or willful misconduct by the Warrant Agent in connection with the services rendered hereunder by the Warrant Agent. The Company also agrees to indemnify the Warrant Agent for, and to hold it harmless against, any loss, liability or expense incurred without gross negligence, bad faith or willful misconduct on the part of the Warrant Agent, arising out of or in connection with its acting as Warrant Agent hereunder, including the reasonable costs and expenses of defending against any claim of such liability.

(b) Agent for the Company. In acting under this Warrant Agreement and in connection with the Warrant Certificates, the Warrant Agent is acting solely as agent of the Company and does not assume any obligations or relationship of agency or trust for or with any of the Holders of Warrant Certificates or beneficial owners of Warrants.

(c) Counsel. The Warrant Agent may consult with counsel satisfactory to it, which may include counsel for the Company, and the written advice of such counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in accordance with the advice of such counsel.

(d) Documents. The Warrant Agent shall be protected and shall incur no liability for or in respect of any action taken or omitted by it in reliance upon any Warrant Certificate, notice, direction, consent, certificate, affidavit, statement or other paper or document reasonably believed by it to be genuine and to have been presented or signed by the proper parties.

(e) Certain Transactions. The Warrant Agent, and its officers, directors and employees, may become the owner of, or acquire any interest in, Warrants, with the same rights that it or they would have if it were not the Warrant Agent hereunder, and, to the extent permitted by applicable law, it or they may engage or be interested in any financial or other transaction with the Company and may act on, or as depository, trustee or agent for, any committee or body of Holders of Warrant Securities or other obligations of the Company as freely as if it were not the Warrant Agent hereunder. Nothing in this Warrant Agreement shall be deemed to prevent the Warrant Agent from acting as trustee under any indenture to which the Company is a party.

(f) No Liability for Interest. Unless otherwise agreed with the Company, the Warrant Agent shall have no liability for interest on any monies at any time received by it pursuant to any of the provisions of this Agreement or of the Warrant Certificates.

(g) No Liability for Invalidity. The Warrant Agent shall have no liability with respect to any invalidity of this Agreement or any of the Warrant Certificates (except as to the Warrant Agent's countersignature thereon).

(h) No Responsibility for Representations. The Warrant Agent shall not be responsible for any of the recitals or representations herein or in the Warrant Certificates (except as to the Warrant Agent's countersignature thereon), all of which are made solely by the Company.

(i) No Implied Obligations. The Warrant Agent shall be obligated to perform only such duties as are herein and in the Warrants specifically set forth and no implied duties or obligations shall be read into this Agreement or the Warrants against the Warrant Agent. The Warrant Agent shall not be under any obligation to take any action hereunder which may tend to involve it in any expense or liability, the payment of which within a reasonable time is not, in its reasonable opinion, assured to it. The Warrant Agent shall not be accountable or under any duty or responsibility for the use by the Company of any of the Warrants authenticated by the Warrant Agent and delivered by it to the Company pursuant to this Agreement or for the application by the Company of the proceeds of the Warrants. The Warrant Agent shall have no duty or responsibility in case of any default by the Company in the performance of its covenants or agreements contained herein or in the Warrants or in the case of the receipt of any written demand from a Holder of a Warrant Certificate with respect to such default, including, without limiting the generality of the foregoing, any duty or responsibility to initiate or attempt to initiate any proceedings at law.

Section 15. Purchase or Consolidation or Change of Name of Warrant Agent. Any corporation into which the Warrant Agent or any successor Warrant Agent may be merged or with which it may be consolidated, or any corporation resulting from any merger or consolidation to which the Warrant Agent or any successor Warrant Agent shall be party, or any corporation succeeding to the corporate trust business of the Warrant Agent or any successor Warrant Agent, shall be the successor to the Warrant Agent under this Agreement without the execution or filing of any paper or any further act on the part of any of the parties hereto, provided that such corporation would be eligible for appointment as a successor Warrant Agent under the provisions of Section 17. In case at the time such successor Warrant Agent shall succeed to the agency created by this Agreement any of the Warrants shall have been countersigned but not delivered, any such successor Warrant Agent may adopt the countersignature of the predecessor Warrant Agent and deliver such Warrants so countersigned; and in case at that time any of the Warrants shall not have been countersigned, any successor Warrant Agent may countersign such Warrants either in the name of the predecessor Warrant Agent or in the name of the successor Warrant Agent; and in all such cases such Warrants shall have the full force provided in the Warrants and in this Agreement.

In case at any time the name of the Warrant Agent shall be changed and at such time any of the Warrants shall have been countersigned but not delivered, the Warrant Agent may adopt the countersignature under its prior name and deliver Warrants so countersigned; and in case at that time any of the Warrants shall not have been countersigned, the Warrant Agent may countersign such Warrants either in its prior name or in its changed name; and in all such cases such Warrants shall have the full force provided in the Warrants and in this Agreement.

Section 16. Duties of Warrant Agent. The Warrant Agent undertakes the duties and obligations imposed by this Agreement upon the following terms and conditions, all of which the Company, by its acceptance hereof, shall be bound:

- (a) The Warrant Agent may consult with legal counsel reasonably acceptable to the Company (who may be legal counsel for the Company), and the opinion of such counsel shall be full and complete authorization and protection to the Warrant Agent as to any action taken or omitted by it in good faith and in accordance with such opinion.
- (b) Whenever in the performance of its duties under this Agreement the Warrant Agent shall deem it necessary or desirable that any fact or matter be proved or established by the Company prior to taking or suffering any action hereunder, such fact or matter (unless other evidence in respect thereof be herein specifically prescribed) may be deemed to be conclusively proved and established by a certificate signed by the Chief Executive Officer or Chief Financial Officer of the Company; and such certificate shall be full authentication to the Warrant Agent for any action taken or suffered in good faith by it under the provisions of this Agreement in reliance upon such certificate.
- (c) Subject to the limitation set forth in Section 14, the Warrant Agent shall be liable hereunder only for its own gross negligence, bad faith or willful misconduct, or for a breach by it of this Agreement.
- (d) The Warrant Agent shall not be liable for or by reason of any of the statements of fact or recitals contained in this Agreement or in the Warrants (except its countersignature thereof) by the Company or be required to verify the same, but all such statements and recitals are and shall be deemed to have been made by the Company only.
- (e) The Warrant Agent shall not be under any responsibility in respect of the validity of this Agreement or the execution and delivery hereof (except the due execution hereof by the Warrant Agent) or in respect of the validity or execution of any Warrant (except its countersignature thereof); nor shall it be responsible for any breach by the Company of any covenant or condition contained in this Agreement or in any Warrant; nor shall it be responsible for the adjustment of the Exercise Price or the making of any change in the number of shares of Common Stock required under the provisions of Section 11 or 13 or responsible for the manner, method or amount of any such change or the ascertaining of the existence of facts that would require any such adjustment or change (except with respect to the exercise of Warrants evidenced by Warrant Certificates after actual notice of any adjustment of the Exercise Price); nor shall it by any act hereunder be deemed to make any representation or warranty as to the authorization or reservation of any shares of Common Stock to be issued pursuant to this Agreement or any Warrant or as to whether any shares of Common Stock will, when issued, be duly authorized, validly issued, fully paid and nonassessable.

(f) Each party hereto agrees that it will perform, execute, acknowledge and deliver or cause to be performed, executed, acknowledged and delivered all such further and other acts, instruments and assurances as may reasonably be required by the other party hereto for the carrying out or performing by any party of the provisions of this Agreement.

(g) The Warrant Agent is hereby authorized to accept instructions with respect to the performance of its duties hereunder from the Chief Executive Officer or Chief Financial Officer of the Company, and to apply to such officers for advice or instructions in connection with its duties, and it shall not be liable and shall be indemnified and held harmless for any action taken or suffered to be taken by it in good faith in accordance with instructions of any such officer, provided Warrant Agent carries out such instructions without gross negligence, bad faith or willful misconduct.

(h) The Warrant Agent and any shareholder, director, officer or employee of the Warrant Agent may buy, sell or deal in any of the Warrants or other securities of the Company or become pecuniarily interested in any transaction in which the Company may be interested, or contract with or lend money to the Company or otherwise act as fully and freely as though it were not Warrant Agent under this Agreement. Nothing herein shall preclude the Warrant Agent from acting in any other capacity for the Company or for any other legal entity.

(i) The Warrant Agent may execute and exercise any of the rights or powers hereby vested in it or perform any duty hereunder either itself or by or through its attorney or agents, and the Warrant Agent shall not be answerable or accountable for any act, default, neglect or misconduct of any such attorney or agents or for any loss to the Company resulting from any such act, default, neglect or misconduct, provided reasonable care was exercised in the selection and continued employment thereof.

Section 17. Change of Warrant Agent. The Warrant Agent may resign and be discharged from its duties under this Agreement upon 30 days' notice in writing sent to the Company and to each transfer agent of the Common Stock, and to the Holders of the Warrant Certificates. The Company may remove the Warrant Agent or any successor Warrant Agent upon 30 days' notice in writing, sent to the Warrant Agent or successor Warrant Agent, as the case may be, and to each transfer agent of the Common Stock, and to the Holders of the Warrant Certificates. If the Warrant Agent shall resign or be removed or shall otherwise become incapable of acting, the Company shall appoint a successor to the Warrant Agent. If the Company shall fail to make such appointment within a period of 30 days after such removal or after it has been notified in writing of such resignation or incapacity by the resigning or incapacitated Warrant Agent or by the Holder of a Warrant Certificate (who shall, with such notice, submit his Warrant Certificate for inspection by the Company), then the Holder of any Warrant Certificate may apply to any court of competent jurisdiction for the appointment of a new Warrant Agent. Any successor Warrant Agent, whether appointed by the Company or by such a court, shall be a corporation organized and doing business under the laws of the United States or of a state thereof, in good standing, which is authorized under such laws to exercise corporate trust powers and is subject to supervision or examination by federal or state authority and which has at the time of its appointment as Warrant Agent a combined capital and surplus of at least \$50,000,000. After appointment, the successor Warrant Agent shall be vested with the same powers, rights, duties and responsibilities as if it had been originally named as Warrant Agent without further act or deed; but the predecessor Warrant Agent shall deliver and transfer to the successor Warrant Agent any property at the time held by it hereunder, and execute and deliver any further assurance, conveyance, act or deed necessary for the purpose. Not later than the effective date of any such appointment, the Company shall file notice thereof in writing with the predecessor Warrant Agent and each transfer agent of the Common Stock, and mail a notice thereof in writing to the Holders of the Warrant Certificates. However, failure to give any notice provided for in this Section 17, or any defect therein, shall not affect the legality or validity of the resignation or removal of the Warrant Agent or the appointment of the successor Warrant Agent, as the case may be.

Section 18. Issuance of New Warrant Certificates. Notwithstanding any of the provisions of this Agreement or of the Warrants to the contrary, the Company may, at its option, issue new Warrant Certificates evidencing Warrants in such form as may be approved by its Board of Directors to reflect any adjustment or change in the Exercise Price per share and the number or kind or class of shares of stock or other securities or property purchasable under the several Warrant Certificates made in accordance with the provisions of this Agreement.

Section 19. Notices. Notices or demands authorized by this Agreement to be given or made (i) by the Warrant Agent or by the Holder of any Warrant Certificate to or on the Company, (ii) subject to the provisions of Section 17, by the Company or by the Holder of any Warrant Certificate to or on the Warrant Agent or (iii) by the Company or the Warrant Agent to the Holder of any Warrant Certificate, shall be deemed given (a) on the date delivered, if delivered personally, (b) on the first Business Day following the deposit thereof with Federal Express or another recognized overnight courier, if sent by Federal Express or another recognized overnight courier, (c) on the fourth Business Day following the mailing thereof with postage prepaid, if mailed by registered or certified mail (return receipt requested), and (d) the time of transmission, if such notice or communication is delivered via facsimile or email attachment at or prior to 5:30 p.m. (New York City time) on a Business Day and (e) the next Business Day after the date of transmission, if such notice or communication is delivered via facsimile or email attachment on a day that is not a Business Day or later than 5:30 p.m. (New York City time) on any Business Day, in each case to the parties at the following addresses (or at such other address for a party as shall be specified by like notice):

(a) If to the Company, to:

Titan Pharmaceuticals, Inc.  
400 Oyster Point Blvd., Suite 505  
South San Francisco, CA 94080  
Attention: Sunil Bhonsle

(b) If to the Warrant Agent, to:

Continental Stock Transfer & Trust Company  
1 State Street 30th Floor,  
New York, NY 10004-1561  
Attention: Compliance Department

For any notice delivered by email to be deemed given or made, such notice must be followed by notice sent by overnight courier service to be delivered on the next business day following such email, unless the recipient of such email has acknowledged via return email receipt of such email.

(c) If to the Holder of any Warrant Certificate, to the address of such Holder as shown on the registry books of the Company. Any notice required to be delivered by the Company to the Holder of any Warrant may be given by the Warrant Agent on behalf of the Company. Notwithstanding any other provision of this Agreement, where this Agreement provides for notice of any event to a Holder of any Warrant Certificate, for a Global Warrant, such notice shall be sufficiently given if given to the Depository (or its designee) pursuant to the procedures of the Depository or its designee.

Section 20. Supplements and Amendments.

(a) The Company and the Warrant Agent may from time to time supplement or amend this Agreement without the approval of any Holders of Warrant Certificates in order to cure any ambiguity, to correct or supplement any provision contained herein which may be defective or inconsistent with any other provisions herein, or to make any other provisions with regard to matters or questions arising hereunder which the Company and the Warrant Agent may deem necessary or desirable and which shall not adversely affect the interests of the Holders of the Warrants Certificates in any material respect.

(b) In addition to the foregoing, with the consent of Holders of Warrants entitled, upon exercise thereof, to receive not less than a majority of the shares of Common Stock issuable thereunder, the Company and the Warrant Agent may modify this Agreement for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Warrant Agreement or modifying in any manner the rights of the Holders of the Warrant Certificates; provided, however, that no modification of the terms (including but not limited to the adjustments described in Section 11) upon which the Warrants are exercisable or reducing the percentage required for consent to modification of this Agreement may be made without the consent of the Holder of each outstanding warrant certificate affected thereby. As a condition precedent to the Warrant Agent's execution of any amendment, the Company shall deliver to the Warrant Agent a certificate from a duly authorized officer of the Company that states that the proposed amendment complies with the terms of this Section 20.

Section 21. Successors. All covenants and provisions of this Agreement by or for the benefit of the Company or the Warrant Agent shall bind and inure to the benefit of their respective successors and assigns hereunder.

Section 22. Benefits of this Agreement. Nothing in this Agreement shall be construed to give any Person other than the Company, the Holders of Warrant Certificates and the Warrant Agent any legal or equitable right, remedy or claim under this Agreement; but this Agreement shall be for the sole and exclusive benefit of the Company, the Warrant Agent and the Holders of the Warrant Certificates.

Section 23. Governing Law. This Agreement and each Warrant issued hereunder shall be governed by, and construed in accordance with, the laws of the State of New York without giving effect to the conflicts of law principles thereof.

Section 24. Counterparts. This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument.

Section 25. Captions. The captions of the sections of this Agreement have been inserted for convenience only and shall not control or affect the meaning or construction of any of the provisions hereof.

Section 26. Information. The Company agrees to promptly provide to the Holders of the Warrants any information it provides to all holders of the Common Stock, except to the extent any such information is publicly available on the EDGAR system (or any successor thereof) of the Securities and Exchange Commission.

Section 27. Force Majeure. Notwithstanding anything to the contrary contained herein, Warrant Agent shall not be liable for any delays or failures in performance resulting from acts beyond its reasonable control including, without limitation, acts of God, terrorist acts, shortage of supply, breakdowns or malfunctions, interruptions or malfunction of computer facilities, or loss of data due to power failures or mechanical difficulties with information storage or retrieval systems, labor difficulties, war, or civil unrest, it being understood that the Warrant Agent shall use reasonable best efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

TITAN PHARMACEUTICALS, INC.

By: \_\_\_\_\_  
Name:  
Title:

CONTINENTAL STOCK TRANSFER & TRUST COMPANY

By: \_\_\_\_\_  
Name:  
Title:

**Annex A: Form of Warrant Certificate Request Notice**

WARRANT CERTIFICATE REQUEST NOTICE

To: Continental Stock Transfer & Trust Company as Warrant Agent for Titan Pharmaceuticals, Inc. (the "Company")

The undersigned Holder of Common Stock Purchase Warrants ("Warrants") in the form of Global Warrants issued by the Company hereby elects to receive a Warrant Certificate evidencing the Warrants held by the Holder as specified below:

1. Name of Holder of Warrants in form of Global Warrants: \_\_\_\_\_
2. Name of Holder in Warrant Certificate (if different from name of Holder of Warrants in form of Global Warrants): \_\_\_\_\_
3. Number of Warrants in name of Holder in form of Global Warrants: \_\_\_\_\_
4. Number of Warrants for which Warrant Certificate shall be issued: \_\_\_\_\_
5. Number of Warrants in name of Holder in form of Global Warrants after issuance of Warrant Certificate, if any: \_\_\_\_\_
6. Warrant Certificate shall be delivered to the following address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Warrant Certificate, the Holder is deemed to have surrendered the number of Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Warrant Certificate.

[SIGNATURE OF HOLDER]

Name of Investing Entity: \_\_\_\_\_

*Signature of Authorized Signatory of Investing Entity:* \_\_\_\_\_

Name of Authorized Signatory: \_\_\_\_\_

Title of Authorized Signatory: \_\_\_\_\_

Date: \_\_\_\_\_

**Annex B: Form of Global Warrant Request Notice**

GLOBAL WARRANT REQUEST NOTICE

To: Continental Stock Transfer & Trust Company as Warrant Agent for Titan Pharmaceuticals, Inc. (the "Company")

The undersigned Holder of Common Stock Purchase Warrants ("Warrants") in the form of Warrants Certificates issued by the Company hereby elects to receive a Global Warrant evidencing the Warrants held by the Holder as specified below:

1. Name of Holder of Warrants in form of Warrant Certificates: \_\_\_\_\_
2. Name of Holder in Global Warrant (if different from name of Holder of Warrants in form of Warrant Certificates): \_\_\_\_\_
3. Number of Warrants in name of Holder in form of Warrant Certificates: \_\_\_\_\_
4. Number of Warrants for which Global Warrant shall be issued: \_\_\_\_\_
5. Number of Warrants in name of Holder in form of Warrant Certificates after issuance of Global Warrant, if any: \_\_\_\_\_
6. Global Warrant shall be delivered to the following address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The undersigned hereby acknowledges and agrees that, in connection with this Global Warrant Exchange and the issuance of the Global Warrant, the Holder is deemed to have surrendered the number of Warrants in form of Warrant Certificates in the name of the Holder equal to the number of Warrants evidenced by the Global Warrant.

[SIGNATURE OF HOLDER]

Name of Investing Entity: \_\_\_\_\_

Signature of Authorized Signatory of Investing Entity: \_\_\_\_\_

Name of Authorized Signatory: \_\_\_\_\_

Title of Authorized Signatory: \_\_\_\_\_

Date: \_\_\_\_\_

**Exhibit 1: Form of Warrant**

**COMMON STOCK PURCHASE WARRANT**

**TITAN PHARMACEUTICALS, INC.**

Warrant Shares: \_\_\_\_\_

Issue Date: \_\_\_\_\_, 2020

THIS COMMON STOCK PURCHASE WARRANT (the "Warrant") certifies that, for value received, \_\_\_\_\_ or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date that the Company's stockholders approve either an increase in the number of the Company's authorized shares of Common Stock or a reverse stock split, in either case in an amount sufficient to permit the exercise in full of this Warrant (the "Initial Exercise Date") and on or prior to 5:00 p.m. (New York City time) on the five (5) year anniversary of the Initial Exercise Date (the "Termination Date") but not thereafter, to subscribe for and purchase from Titan Pharmaceuticals, Inc., a Delaware corporation (the "Company"), up to \_\_\_\_\_ shares (as subject to adjustment hereunder, the "Warrant Shares") of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and the Depository Trust Company or its nominee ("DTC") shall initially be the sole registered holder of this Warrant, subject to a Holder's right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agency Agreement, in which case this sentence shall not apply.

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

"Affiliate" means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

"Bid Price" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported in the "Pink Sheets" published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

"Board of Directors" means the board of directors of the Company.

"Business Day" means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

"Commission" means the United States Securities and Exchange Commission.

"Common Stock" means the common stock of the Company, par value \$0.001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

“Common Stock Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Registration Statement” means the Company’s registration statement on Form S-1 (File No. 333-249550).

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Trading Day” means a day on which the Common Stock is traded on a Trading Market.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

“Transfer Agent” means Continental Stock Transfer & Trust Company, the current transfer agent of the Company, with a mailing address of 1 State Street, 30th Floor, New York, NY 10004-1561 and a facsimile number of (212) 616-7619, and any successor transfer agent of the Company.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported in the “Pink Sheets” published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“Warrant Agency Agreement” means that certain warrant agency agreement, dated on or about the Initial Exercise Date, between the Company and the Warrant Agent.

“Warrant Agent” means the Transfer Agent and any successor warrant agent of the Company.

“Warrants” means this Warrant and other Common Stock purchase warrants issued by the Company pursuant to the Registration Statement.

Section 2. Exercise.

a) Exercise of Warrant. Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed facsimile copy or PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the "Notice of Exercise"). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier's check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

Notwithstanding the foregoing in this Section 2(a), a holder whose interest in this Warrant is a beneficial interest in certificate(s) representing this Warrant held in book-entry form through DTC (or another established clearing corporation performing similar functions), shall effect exercises made pursuant to this Section 2(a) by delivering to DTC (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by DTC (or such other clearing corporation, as applicable), subject to a Holder's right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agency Agreement, in which case this sentence shall not apply, provided, however, a beneficial holder shall have all of the rights and remedies of a "Holder" hereunder.

b) Exercise Price. The exercise price per share of the Common Stock under this Warrant shall be \$\_\_\_, subject to adjustment hereunder (the "Exercise Price").

c) Cashless Exercise. If at any time after the Initial Exercise Date, there is no effective registration statement registering, or no current prospectus available for, the issuance of the Warrant Shares to the Holder, then this Warrant may only be exercised, in whole or in part, at such time by means of a "cashless exercise" in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of "regular trading hours" (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder's execution of the applicable Notice of Exercise if such Notice of Exercise is executed during "regular trading hours" on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of "regular trading hours" on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of "regular trading hours" on such Trading Day;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

Notwithstanding anything herein to the contrary, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to this Section 2(c).

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, nonexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61<sup>st</sup> day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Intentionally omitted.

c) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “Distribution”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation). To the extent that this Warrant has not been partially or completely exercised at the time of such Distribution, such portion of the Distribution shall be held in abeyance for the benefit of the Holder until the Holder has exercised this Warrant.

e) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction other than one in which a Successor Entity (as defined below) that is a publicly traded corporation whose stock is quoted or listed on a Trading Market assumes this Warrant such that the Warrant shall be exercisable for the publicly traded common stock of such Successor Entity, the Company or any Successor Entity shall, at the Holder's option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, if the Fundamental Transaction is not within the Company's control, including not approved by the Company's Board of Directors or the consideration is not in all stock of the Successor Entity, Holder shall have the option to require the Company or any Successor Entity to purchase its Warrant for the Black Scholes Value of the unexercised portion of this Warrant as of the date of consummation of such Fundamental Transaction using the same type or form of consideration (and in the same proportion) that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction. Any cash payment will be made by wire transfer of immediately available funds within five Business Days of the Holder's election (or, if later, on the effective date of the Fundamental Transaction). “Black Scholes Value” means the value of this Warrant based on the Black and Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (“Bloomberg”) determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg as of the Trading Day immediately following the public announcement of the applicable Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (D) a remaining option time equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds within five Business Days of the Holder's election (or, if later, on the effective date of the Fundamental Transaction). The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(e) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein.

f) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

g) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

#### Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. If this Warrant is not held in global form through DTC (or any successor depository, this Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the original issuance date and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Warrant Agent shall register this Warrant, upon records to be maintained by the Warrant Agent for that purpose (the "Warrant Register"), in the name of the record Holder hereof from time to time. The Warrant Agent and the Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

#### Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a "cashless exercise" pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then, such action may be taken or such right may be exercised on the next succeeding Business Day.

d) Authorized Shares. The Company covenants that, promptly following the Issue Date, the Company shall take all corporate action necessary to call a meeting of its stockholders (which may be its annual meeting) (the “Stockholders Meeting”), which shall occur not later than December 31, 2020, for the purpose of seeking approval of the Company’s stockholders to either (i) increase the number of shares of Common Stock the Company is authorized to issue or (ii) effect a reverse split of the Common Stock, in either event sufficient to permit the exercise in full of the Warrants in accordance with its terms (a “Capital Event”). In connection therewith, the Company will as soon as reasonably practicable after the Issue Date file with the Commission proxy materials (including a proxy statement and form of proxy) for use at the Stockholders Meeting and, after receiving and promptly responding to any comments of the Commission thereon, shall as soon as reasonably practicable mail such proxy materials to the stockholders of the Company. The Company will comply with Section 14(a) of the Exchange Act and the rules promulgated thereunder in relation to any proxy statement (as amended or supplemented, the “Proxy Statement”) and any form of proxy to be sent to the stockholders of the Company in connection with the Stockholders Meeting, and the Proxy Statement shall not, on the date that the Proxy Statement (or any amendment thereof or supplement thereto) is first mailed to stockholders or at the time of the Stockholders Meeting, contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein not false or misleading, or omit to state any material fact necessary to correct any statement in any earlier communication with respect to the solicitation of proxies or the Stockholders Meeting which has become false or misleading. If the Company should discover at any time prior to the Stockholders Meeting, any event relating to the Company or the Subsidiary or any of their respective affiliates, officers or directors that is required to be set forth in a supplement or amendment to the Proxy Statement, in addition to the Company’s obligations under the Exchange Act, the Company will promptly inform the Underwriter thereof. The Company’s Board of Directors shall recommend to the Company’s stockholders that the stockholders vote in favor of the Capital Event at the Stockholders Meeting and take all commercially reasonable action (including, without limitation, the hiring of a proxy solicitation firm of nationally recognized standing) to solicit the approval of the stockholders for the Capital Event. If the Company does not obtain stockholder approval for the Capital Event at the Stockholders Meeting, the Company shall call a meeting every four months thereafter to seek stockholder approval until the date that stockholder approval is obtained. No later than two (2) business days following stockholder approval of the Capital Event, the Company shall file with the Secretary of State of Delaware a certificate of amendment to the Company’s Certificate of Incorporation to effect the Capital Event, which certificate of amendment shall provide that it shall become immediately effective upon filing. The Company shall issue a press release announcing the effectiveness of the Capital Event no later than one (1) business day after such filing.

Following the occurrence of a Capital Event and thereafter during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Warrant (whether brought against a party hereto or their respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Warrant and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by facsimile or e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at Titan Pharmaceuticals, Inc., 400 Oyster Point Blvd., Suite 505 South San Francisco, California 94080 Attention: Chief Executive Officer, email address: sbhonsle@titanpharm.com, or such other facsimile number, email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by facsimile or e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number, e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived) in accordance with the provisions set forth in Section 20 of the Warrant Agency Agreement or otherwise with the written consent of the Company and the Holder.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

o) Warrant Agency Agreement. This Warrant is issued subject to the Warrant Agency Agreement. To the extent any provision of this Warrant Certificate conflicts with the express provisions of the Warrant Agency Agreement, the provisions of this Warrant shall govern and be controlling.

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*(Signature Page Follows)*

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

**TITAN PHARMACEUTICALS, INC.**

By: \_\_\_\_\_  
Name:  
Title:

**NOTICE OF EXERCISE**

TO: [ ]

(1) The undersigned hereby elects to purchase \_\_\_\_\_ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

in lawful money of the United States; or

if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

\_\_\_\_\_

The Warrant Shares shall be delivered to the following DWAC Account Number:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

[SIGNATURE OF HOLDER]

Name of Investing Entity: \_\_\_\_\_

*Signature of Authorized Signatory of Investing Entity:* \_\_\_\_\_

Name of Authorized Signatory: \_\_\_\_\_

Title of Authorized Signatory: \_\_\_\_\_

Date: \_\_\_\_\_

**ASSIGNMENT FORM**

*(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)*  
FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: \_\_\_\_\_  
(Please Print)

Address: \_\_\_\_\_  
(Please Print)

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Dated: \_\_\_\_\_, \_\_\_\_\_

Holder's Signature: \_\_\_\_\_

Holder's Address: \_\_\_\_\_

## LOCK-UP AND VOTING AGREEMENT

This Lock-Up and Voting Agreement (this “**Lock-Up and Voting Agreement**”) is being delivered to you in connection with an understanding by and between Titan Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), and the person or persons named on the signature pages hereto (collectively, the “**Holder**”).

Reference is hereby made to the public offering (the “**Offering**”) of securities of the Company, including shares (“**Shares**”) of common stock, par value \$0.001 per share, of the Company (the “**Common Stock**”), pursuant to the registration statement on Form S-1 (File No. 333-249550) (“**Registration Statement**”). The Company is requiring a lock-up and voting agreement in substance the same as this Lock-Up and Voting Agreement from all purchasers that purchase in excess of \$100,000 of Shares in the Offering (each, a “**Purchaser**”).

The Holder agrees solely with the Company that, from the public announcement of the final pricing of the Offering (the “**Effective Date**”) and ending at 10:00 pm (New York City time) on Friday, October 30, 2020 (such date, the “**Lock-Up Date**” and such period, the “**Restricted Period**”), neither the Holder, nor any affiliate of the Holder (“**Affiliate**”) which (x) had or has knowledge of the transactions contemplated by the Offering, (y) has or shares discretion relating to the Holder’s investments or trading or information concerning the Holder’s investments, including in respect of the Shares, or (z) is subject to the Holder’s review or input concerning such Affiliate’s investments or trading (together, the “**Holder’s Trading Affiliates**”), collectively, shall sell, dispose or otherwise transfer, directly or indirectly (including, without limitation, any sales, short sales, swaps or any derivative transactions that would be equivalent to any sales or short positions), on any trading day on the primary trading market of the Company during the Restricted Period, shares of Common Stock, including the Shares, beneficially owned by the Holder during the Restricted Period.

Additionally, the Holder agrees to vote all shares of Common Stock it beneficially owns on and after the Lock-Up Date, including the Shares, with respect to all of the proposals presented by the Company to the stockholders of the Company at the Company’s next meeting of its stockholders, including at every adjournment or postponement thereof. For clarity, the Holder’s agreement to vote its shares of Common Stock in accordance with the immediately preceding sentence, does not require the Holder to vote its shares for or against any particular proposal or proposals, whether or not such proposal or proposals are recommended by the Company’s board of directors.

Notwithstanding anything herein to the contrary, during the Restricted Period, the Holder may, directly or indirectly, sell or transfer all, or any part, of the Restricted Shares to any third party (an “**Assignee**”) in a transaction which does not need to be reported on the Nasdaq consolidated tape, without complying with (or otherwise limited by) the restrictions set forth in this Lock-Up and Voting Agreement; provided that, as a condition to any such sale or transfer an authorized signatory of the Company and such Assignee duly execute and deliver a Lock-Up and Voting Agreement in the form of this Lock-Up and Voting Agreement (an “**Assignee Agreement**”, and each such transfer, a “**Permitted Transfer**”).

Any notices, consents, waivers or other communications required or permitted to be given under the terms of this Lock-Up and Voting Agreement must be in writing and shall be delivered to the Holder at the e-mail address or facsimile number on the signature page hereto.

This Lock-Up and Voting Agreement constitutes the entire agreement among the parties hereto with respect to the subject matter hereof and supersedes all prior negotiations, letters and understandings relating to the subject matter hereof and are fully binding on the parties hereto.

This Lock-Up and Voting Agreement may be executed simultaneously in any number of counterparts. Each counterpart shall be deemed to be an original, and all such counterparts shall constitute one and the same instrument. This Lock-Up and Voting Agreement may be executed and accepted by facsimile or PDF signature and any such signature shall be of the same force and effect as an original signature.

The terms of this Lock-Up and Voting Agreement shall be binding upon and shall inure to the benefit of each of the parties hereto and their respective successors and assigns.

This Lock-Up and Voting Agreement may not be amended or modified except in writing signed by each of the parties hereto.

All questions concerning the construction, validity, enforcement and interpretation of this Lockup and Voting Agreement shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof.

Each party hereto acknowledges that, in view of the uniqueness of the transactions contemplated by this Lock-Up and Voting Agreement, the other party or parties hereto will not have an adequate remedy at law for money damages in the event that this Lock-Up and Voting Agreement has not been performed in accordance with its terms, and therefore agrees that such other party or parties shall be entitled to seek specific enforcement of the terms hereof in addition to any other remedy it may seek, at law or in equity.

The obligations of the Holder under this Lock-Up and Voting Agreement are several and not joint with the obligations of any other holder of any of the Shares issued under the Registration Statement (each, an "**Other Holder**"), and the Holder shall not be responsible in any way for the performance of the obligations of any Other Holder under any such other agreement. Nothing contained in this Lock-Up and Voting Agreement, and no action taken by the Holder pursuant hereto, shall be deemed to constitute the Holder and Other Holders as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Holder and the Other Holders are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by this Lock-Up and Voting Agreement and the Company acknowledges that the Holder and the Other Holders are not acting in concert or as a group with respect to such obligations or the transactions contemplated by this Lock-Up and Voting Agreement or any other agreement. The Company and the Holder confirm that the Holder has independently participated in the negotiation of the transactions contemplated hereby with the advice of its own counsel and advisors. The Holder shall be entitled to independently protect and enforce its rights, including, without limitation, the rights arising out of this Lock-Up and Voting Agreement, and it shall not be necessary for any Other Holder to be joined as an additional party in any proceeding for such purpose.

The Company hereby represents and warrants as of the date hereof and covenants and agrees from and after the date hereof that none of the terms offered to any Other Holder with respect to any restrictions on the sale of Shares substantially in the form of this Lock-Up and Voting Agreement (or any amendment, modification, waiver or release thereof) (each an "**Other Agreement**"), is or will be more favorable to such Other Holder than those of the Holder and this Lock-Up and Voting Agreement, and the Company agrees to use reasonable best efforts to enforce the terms of any Other Agreement. If, and whenever on or after the date hereof, the Company enters into an Other Agreement with terms that are materially different from this Lock-Up and Voting Agreement, then (i) the Company shall provide notice thereof to the Holder promptly following the occurrence thereof and (ii) the terms and conditions of this Lock-Up and Voting Agreement shall be, without any further action by the Holder or the Company, automatically amended and modified in an economically and legally equivalent manner such that the Holder shall receive the benefit of the more favorable terms and/or conditions (as the case may be) set forth in such Other Agreement; provided that, upon written notice to the Company, at any time the Holder may elect not to accept the benefit of any such amended or modified term or condition, in which event the term or condition contained in this Lock-Up and Voting Agreement shall apply to the Holder as it was in effect immediately prior to such amendment or modification as if such amendment or modification never occurred with respect to the Holder. The provisions of this paragraph shall apply similarly and equally to each Other Agreement.

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The parties hereto have executed this Lock-Up and Voting Agreement as of the date first set forth above.

**TITAN PHARMACEUTICALS, INC.**

By: \_\_\_\_\_

Name:

Title:

E-mail:

Facsimile:

[Signature Page to Lock-Up and Voting Agreement]

The parties hereto have executed this Lock-Up and Voting Agreement as of the date first set forth above.

Agreed to and Acknowledged:

**HOLDER**

By: \_\_\_\_\_  
Name:  
Title:  
E-mail:  
Facsimile:

[Signature Page to Lock-Up and Voting Agreement]

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