

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K
CURRENT REPORT

Pursuant to Section 13 or 15(d) of The Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): July 27, 2017

Titan Pharmaceuticals, Inc.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation)

001-13341
(Commission File Number)

94-3171940
(IRS Employer Identification No.)

400 Oyster Point Blvd., Suite 505, South San Francisco, CA 94080
(Address of principal executive offices and zip code)

650-244-4990
(Registrant's telephone number including area code)

(Registrant's former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12(b) under the Exchange Act (17 CFR 240.14a-12(b))
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

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 13(a) of the Exchange Act.

Item 1.01 Entry into Material Definitive Agreement.

On July 27, 2016, Titan Pharmaceuticals, Inc. (the “Company”) entered into a venture loan and security agreement (the “Loan Agreement”) with Horizon Technology Finance Corporation (the “Lender”), which provides for up to \$10,000,000 in loans to the Company, including an initial loan in the amount of \$7,000,000 funded upon signing of the Loan Agreement. An additional \$3,000,000 loan is subject to the Company’s achievement of the following milestones on or prior to March 31, 2018:

- Revenue resulting from royalty payments of not less than \$750,000;
- Execution of a partnership or similar agreement for the marketing and sale of Probuphine in Europe; and
- Market capitalization of not less than \$50,000,000.

Repayment of the loans is on an interest-only basis through December 31, 2018, followed by monthly payments of principal and accrued interest for the balance of the 46-month term. The loans bear interest at a floating coupon rate of one-month LIBOR (floor of 1.10%) plus 8.40%. A final payment equal to 5.0% of each loan tranche will be due on the scheduled maturity date for such loan. In addition, if the Company repays all or a portion of the loan prior to the applicable maturity date, it will pay the Lender a prepayment penalty fee, based on a percentage of the then outstanding principal balance, equal to 4% if the prepayment occurs during the interest-only payment period, 3% if the prepayment occurs during the 12 months following such period, and 2% thereafter.

The Company’s obligations under the Loan Agreement are secured by a first priority security interest in all of its assets, with the exception of its intellectual property. The Company agreed not to pledge or otherwise encumber its intellectual property assets, subject to certain exceptions.

The Loan Agreement includes customary affirmative and restrictive covenants, excluding any covenants to attain or maintain certain financial metrics, and also includes customary events of default, including for payment failures, breaches of covenants, change of control and material adverse changes. Upon the occurrence of an event of default and following any applicable cure periods, a default interest rate of an additional 5% may be applied to the outstanding loan balances, and the Lender may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the Loan Agreement.

The foregoing description of the Loan Agreement is not complete and is qualified in its entirety by reference to the full text of the Loan Agreement, a copy of which is filed as Exhibit 10.23 to this report and is incorporated by reference herein.

In connection with the Loan Agreement, the Company issued the Lender warrants as described below in Item 3.02 of this report.

Armentum Partners acted as the Company’s financial advisor and received a fee of 1.5% of the loan facility.

The Company issued a press release on July 27, 2017 announcing its entry into the Loan Agreement, which press release is attached as Exhibit 99.1 to this report.

Item 2.03 Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant.

The information set forth above and referenced under Item 1.01 that relates to the creation of a direct financial obligation of the Company is hereby incorporated by reference into this Item 2.03 of this report.

Item 3.02 Unregistered Sales of Equity Securities.

On July 27, 2017, in connection with its entry into the Loan Agreement, the Company issued the Lender warrants to purchase an aggregate of 280,612 shares of common stock (the “Lender Warrants”). The per share exercise price of the Lender Warrants is the lower of (i) \$1.96 or (ii) the price per share of any securities that may be issued by the Company in an equity financing during the next 18 months. The Company issued the Lender an additional warrant that will only become exercisable upon the funding of the second tranche of the loan, the number of shares and exercise price to be calculated at such time. The Company has agreed to file a registration statement within the next 90 days covering the resale of the shares underlying the Lender Warrants.

The foregoing description of the Lender Warrants is not complete and is qualified in its entirety by reference to the full text of the form of Lender Warrant, which is filed as Exhibit 4.4 to this report and is incorporated by reference herein.

The Warrants have not been registered under the Securities Act of 1933, as amended (the “Securities Act”) or the securities laws of any state, and were offered and issued in reliance on the exemption from registration under the Securities Act, provided by Section 4(a)(2) under the Securities Act.

Item 9.01. Financial Statements and Exhibits.**(d) Exhibits**

The following exhibit is filed herewith:

Exhibit Number	Description
4.4	Form of Lender Warrant
10.23	Venture Loan and Security Agreement, dated July 27, 2017, by and between Titan Pharmaceuticals, Inc. and Horizon Technology Finance Corporation
99.1	Press Release dated July 27, 2017

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: July 27, 2017

TITAN PHARMACEUTICALS, INC.

By: /s/ Sunil Bhonsle

Name: Sunil Bhonsle

Title: President and Chief Executive Officer

THIS WARRANT HAS NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED OR ANY STATE SECURITIES LAWS. NO SALE OR DISPOSITION MAY BE EFFECTED WITHOUT (i) EFFECTIVE REGISTRATION STATEMENTS RELATED THERETO, (ii) AN OPINION OF COUNSEL OR OTHER EVIDENCE, REASONABLY SATISFACTORY TO THE COMPANY, THAT SUCH REGISTRATIONS ARE NOT REQUIRED, (iii) RECEIPT OF NO-ACTION LETTERS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITIES, OR (iv) OTHERWISE COMPLYING WITH THE PROVISIONS OF SECTION 7 OF THIS WARRANT.

TITAN PHARMACEUTICALS, INC.

WARRANT TO PURCHASE SHARES OF STOCK

(Loan A)

THIS CERTIFIES THAT, for value received, HORIZON TECHNOLOGY FINANCE CORPORATION and its assignees are entitled to subscribe for and purchase that number of the fully paid and nonassessable shares of stock (as adjusted pursuant to Section 4 hereof, the "Shares") of TITAN PHARMACEUTICALS, INC., a Delaware corporation (the "Company"), as is determined pursuant to the next paragraph hereof at the price per share as is determined pursuant to the next paragraph hereof (such price and such other price as shall result, from time to time, from the adjustments specified in Section 4 hereof is herein referred to as the "Warrant Price"), subject to the provisions and upon the terms and conditions hereinafter set forth. As used herein, (a) the term "Shares" shall mean, at the holder's election, either (i) Company's current, publicly traded common stock (the "Common Stock"), and any stock into or for which such Common Stock may hereafter be converted or exchanged, or (ii) Next Round Stock (as defined below), and any stock into or for which all then outstanding shares of such Next Round Stock may hereafter be converted or exchanged, and after the conversion of all then-outstanding shares of the Next Round Stock to shares of Common Stock, shall mean the Common Stock; (b) the term "Date of Grant" shall mean July 27, 2017, and (c) the term "Other Warrants" shall mean any other warrants issued by the Company in connection with the transaction with respect to which this Warrant was issued, and any warrant issued upon transfer or partial exercise of or in lieu of this Warrant. The term "Warrant" as used herein shall be deemed to include Other Warrants unless the context clearly requires otherwise.

The Warrant Price shall be (i) if this Warrant is exercised for Common Stock, the average of the closing price of the Company's Common Stock as reported by NASDAQ over the five (5) trading days immediately preceding the Date of Grant and (ii) if this Warrant is exercised for Next Round Stock, the lowest price per share at which shares of the Company's equity securities are sold in any offering occurring during the period commencing as of the Date of Grant and continuing through the date that is eighteen (18) months after the Date of Grant (such stock, the "Next Round Stock"). The number of shares for which this Warrant is exercisable shall be the nearest whole number determined by dividing \$275,000 by the Warrant Price determined pursuant to this paragraph.

1. Term. The purchase right represented by this Warrant is exercisable, in whole or in part, at any time and from time to time from the Date of Grant through seven (7) years after the Date of Grant (the “Term”).

2. Method of Exercise; Payment; Issuance of New Warrant. Subject to Section 1 hereof, the purchase right represented by this Warrant may be exercised by the holder hereof, in whole or in part and from time to time, at the election of the holder hereof, by (a) the surrender of this Warrant (with the notice of exercise substantially in the form attached hereto as Exhibit A-1 duly completed and executed) at the principal office of the Company and by the payment to the Company, by certified or bank check, or by wire transfer to an account designated by the Company (a “Wire Transfer”) of an amount equal to the then applicable Warrant Price multiplied by the number of Shares then being purchased; (b) if in connection with a registered public offering of the Company’s securities, the surrender of this Warrant (with the notice of exercise form attached hereto as Exhibit A-2 duly completed and executed) at the principal office of the Company together with notice of arrangements reasonably satisfactory to the Company for payment to the Company either by certified or bank check or by Wire Transfer from the proceeds of the sale of shares to be sold by the holder in such public offering of an amount equal to the then applicable Warrant Price per share multiplied by the number of Shares then being purchased; or (c) exercise of the “net issuance” right provided for in Section 10.2 hereof. The person or persons in whose name(s) any certificate(s) representing the Shares shall be issuable upon exercise of this Warrant shall be deemed to have become the holder(s) of record of, and shall be treated for all purposes as the record holder(s) of, the shares represented thereby (and such shares shall be deemed to have been issued) immediately prior to the close of business on the date or dates upon which this Warrant is exercised. In the event of any exercise of the rights represented by this Warrant, certificates for the shares of stock so purchased shall be delivered to the holder hereof as soon as possible and in any event within thirty (30) days after such exercise and, unless this Warrant has been fully exercised or expired, a new Warrant representing the portion of the Shares, if any, with respect to which this Warrant shall not then have been exercised shall also be issued to the holder hereof as soon as possible and in any event within such thirty-day period; provided, however, at such time as the Company is subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, if requested by the holder of this Warrant, the Company shall cause its transfer agent to deliver the certificate representing Shares issued upon exercise of this Warrant to a broker or other person (as directed by the holder exercising this Warrant) within the time period required to settle any trade made by the holder after exercise of this Warrant.

3. Stock Fully Paid; Reservation of Shares. All Shares that may be issued upon the exercise of the rights represented by this Warrant will, upon issuance pursuant to the terms and conditions herein, be fully paid and nonassessable, and free from all preemptive rights and taxes, liens and charges with respect to the issue thereof. During the period within which the rights represented by this Warrant may be exercised, the Company will at all times have authorized, and reserved for the purpose of the issue upon exercise of the purchase rights evidenced by this Warrant, a sufficient number of shares of its Common Stock to provide for the exercise of the rights represented by this Warrant.

4. Adjustment of Warrant Price and Number of Shares. The number and kind of securities purchasable upon the exercise of this Warrant and the Warrant Price shall be subject to adjustment from time to time upon the occurrence of certain events, as follows:

(a) Reclassification or Merger. In case of any reclassification or change of securities of the class issuable upon exercise of this Warrant (other than a change in par value, or from par value to no par value, or from no par value to par value, or as a result of a subdivision or combination), or in case of any merger of the Company with or into another corporation (other than a merger with another corporation in which the Company is the acquiring and the surviving corporation and which does not result in any reclassification or change of outstanding securities issuable upon exercise of this Warrant), or in case of any sale of all or substantially all of the assets of the Company, the Company, or such successor or purchasing corporation, as the case may be, shall duly execute and deliver to the holder of this Warrant a new Warrant (in form and substance satisfactory to the holder of this Warrant), so that the holder of this Warrant shall have the right to receive upon exercise of this Warrant, at a total purchase price not to exceed that payable upon the exercise of the unexercised portion of this Warrant, and in lieu of the shares of Common Stock theretofore issuable upon exercise of this Warrant, (i) the kind and amount of shares of stock, other securities, money and property receivable upon such reclassification, change, merger or sale by a holder of the number of shares of Common Stock then purchasable under this Warrant, or (ii) in the case of such a merger or sale in which the consideration paid consists all or in part of assets other than securities of the successor or purchasing corporation, at the option of the holder of this Warrant, the securities of the successor or purchasing corporation having a value at the time of the transaction equivalent to the value of the Common Stock purchasable upon exercise of this Warrant at the time of the transaction. Any new Warrant shall provide for adjustments that shall be as nearly equivalent as may be practicable to the adjustments provided for in this Section 4. The provisions of this Section 4(a) shall similarly apply to successive reclassifications, changes, mergers and sales.

(b) Subdivision or Combination of Shares. If the Company at any time while this Warrant remains outstanding and unexpired shall subdivide or combine its outstanding shares of Common Stock, the Warrant Price shall be proportionately decreased and the number of Shares issuable hereunder shall be proportionately increased in the case of a subdivision and the Warrant Price shall be proportionately increased and the number of Shares issuable hereunder shall be proportionately decreased in the case of a combination.

(c) Stock Dividends and Other Distributions. If the Company at any time while this Warrant is outstanding and unexpired shall (i) pay a dividend with respect to its Common Stock payable in Common Stock, then the Warrant Price shall be adjusted, from and after the date of determination of shareholders entitled to receive such dividend or distribution, to that price determined by multiplying the Warrant Price in effect immediately prior to such date of determination by a fraction (A) the numerator of which shall be the total number of shares of Common Stock outstanding immediately prior to such dividend or distribution, and (B) the denominator of which shall be the total number of shares of Common Stock outstanding immediately after such dividend or distribution; or (ii) make any other distribution with respect to Common Stock (except any distribution specifically provided for in Sections 4(a) and 4(b)), then, in each such case, provision shall be made by the Company such that the holder of this Warrant shall receive upon exercise of this Warrant a proportionate share of any such dividend or distribution as though it were the holder of the Shares as of the record date fixed for the determination of the shareholders of the Company entitled to receive such dividend or distribution.

(d) Adjustment of Number of Shares. Upon each adjustment in the Warrant Price, the number of Shares purchasable hereunder shall be adjusted, to the nearest whole share, to the product obtained by multiplying the number of Shares purchasable immediately prior to such adjustment in the Warrant Price by a fraction, the numerator of which shall be the Warrant Price immediately prior to such adjustment and the denominator of which shall be the Warrant Price immediately thereafter.

5 . Notice of Adjustments. Whenever the Warrant Price or the number of Shares purchasable hereunder shall be adjusted pursuant to Section 4 hereof, the Company shall make a certificate signed by its chief financial officer setting forth, in reasonable detail, the event requiring the adjustment, the amount of the adjustment, the method by which such adjustment was calculated, and the Warrant Price and the number of Shares purchasable hereunder after giving effect to such adjustment, and shall cause copies of such certificate to be mailed (without regard to Section 13 hereof, by first class mail, postage prepaid) to the holder of this Warrant.

6 . Fractional Shares. No fractional shares of Common Stock will be issued in connection with any exercise hereunder, but in lieu of such fractional shares the Company shall make a cash payment therefor based on the fair market value of the Common Stock on the date of exercise as reasonably determined in good faith by the Company's Board of Directors.

7. Compliance with Securities Act; Disposition of Warrant or Shares of Common Stock.

(a) Compliance with Securities Act. The holder of this Warrant, by acceptance hereof, agrees that this Warrant, and the Shares to be issued upon exercise hereof are being acquired for investment and that such holder will not offer, sell or otherwise dispose of this Warrant, or any Shares except under circumstances which will not result in a violation of the Securities Act of 1933, as amended (the "Act") or any applicable state securities laws. Upon exercise of this Warrant, unless the Shares being acquired are registered under the Act and any applicable state securities laws or an exemption from such registration is available, the holder hereof shall confirm in writing that the Shares so purchased are being acquired for investment and not with a view toward distribution or resale in violation of the Act and shall confirm such other matters related thereto as may be reasonably requested by the Company. This Warrant and all Shares issued upon exercise of this Warrant (unless registered under the Act and any applicable state securities laws) shall be stamped or imprinted with a legend in substantially the following form:

"THE SECURITIES EVIDENCED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY STATE SECURITIES LAWS. NO SALE OR DISPOSITION MAY BE EFFECTED WITHOUT (i) EFFECTIVE REGISTRATION STATEMENTS RELATED THERETO, (ii) AN OPINION OF COUNSEL OR OTHER EVIDENCE, REASONABLY SATISFACTORY TO THE COMPANY, THAT SUCH REGISTRATIONS ARE NOT REQUIRED, (iii) RECEIPT OF NO-ACTION LETTERS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITIES, OR (iv) OTHERWISE COMPLYING WITH THE PROVISIONS OF SECTION 7 OF THE WARRANT UNDER WHICH THESE SECURITIES WERE ISSUED, DIRECTLY OR INDIRECTLY."

Said legend shall be removed by the Company, upon the request of a holder, at such time as the restrictions on the transfer of the applicable security shall have terminated. In addition, in connection with the issuance of this Warrant, the holder specifically represents to the Company by acceptance of this Warrant as follows:

(1) The holder is aware of the Company's business affairs and financial condition, and has acquired information about the Company sufficient to reach an informed and knowledgeable decision to acquire this Warrant. The holder is acquiring this Warrant for its own account for investment purposes only and not with a view to, or for the resale in connection with, any "distribution" thereof in violation of the Act.

(2) The holder understands that this Warrant has not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the holder's investment intent as expressed herein.

(3) The holder further understands that this Warrant must be held indefinitely unless subsequently registered under the Act and qualified under any applicable state securities laws, or unless exemptions from registration and qualification are otherwise available. The holder is aware of the provisions of Rule 144, promulgated under the Act.

(4) The holder is an "accredited investor" as such term is defined in Rule 501 of Regulation D promulgated under the Act.

(b) Disposition of Warrant or Shares. With respect to any offer, sale or other disposition of this Warrant or any Shares acquired pursuant to the exercise of this Warrant prior to registration of such Warrant or Shares, the holder hereof agrees to give written notice to the Company prior thereto, describing briefly the manner thereof, together with a written opinion of such holder's counsel, or other evidence, if reasonably satisfactory to the Company, to the effect that such offer, sale or other disposition may be effected without registration or qualification (under the Act as then in effect or any federal or state securities law then in effect) of this Warrant or the Shares and indicating whether or not under the Act certificates for this Warrant or the Shares to be sold or otherwise disposed of require any restrictive legend as to applicable restrictions on transferability in order to ensure compliance with such law. Upon receiving such written notice and reasonably satisfactory opinion or other evidence, the Company, as promptly as practicable but no later than fifteen (15) days after receipt of the written notice, shall notify such holder that such holder may sell or otherwise dispose of this Warrant or such Shares, all in accordance with the terms of the notice delivered to the Company. If a determination has been made pursuant to this Section 7(b) that the opinion of counsel for the holder or other evidence is not reasonably satisfactory to the Company, the Company shall so notify the holder promptly with details thereof after such determination has been made. Notwithstanding the foregoing, this Warrant or such Shares may, as to such federal laws, be offered, sold or otherwise disposed of in accordance with Rule 144 or 144A under the Act, provided that the Company shall have been furnished with such information as the Company may reasonably request to provide a reasonable assurance that the provisions of Rule 144 or 144A have been satisfied. Each certificate representing this Warrant or the Shares thus transferred (except a transfer pursuant to Rule 144 or 144A) shall bear a legend as to the applicable restrictions on transferability in order to ensure compliance with such laws, unless in the aforesaid opinion of counsel for the holder, such legend is not required in order to ensure compliance with such laws. The Company may issue stop transfer instructions to its transfer agent in connection with such restrictions.

(c) Applicability of Restrictions. Neither any restrictions of any legend described in this Warrant nor the requirements of Section 7(b) above shall apply to any transfer of, or grant of a security interest in, this Warrant (or the Common Stock obtainable upon exercise thereof) or any part hereof (i) to a partner of the holder if the holder is a partnership or to a member of the holder if the holder is a limited liability company, (ii) to a partnership of which the holder is a partner or to a limited liability company of which the holder is a member, (iii) to any affiliate of the holder if the holder is a corporation, (iv) notwithstanding the foregoing, to any corporation, company, limited liability company, limited partnership, partnership, or other person managed or sponsored by Horizon Technology Finance Corporation (“HRZN”) or in which HRZN has an interest, (v) or to a lender to the holder or any of the foregoing; provided, however, in any such transfer, if applicable, the transferee shall on the Company’s request agree in writing to be bound by the terms of this Warrant as if an original holder hereof.

8. Rights as Shareholders; Information. No holder of this Warrant, as such, shall be entitled to vote or receive dividends or be deemed the holder of Common Stock which may at any time be issuable upon the exercise hereof for any purpose, nor shall anything contained herein be construed to confer upon the holder of this Warrant, as such, any of the rights of a shareholder of the Company or any right to vote for the election of directors or upon any matter submitted to shareholders at any meeting thereof, or to receive notice of meetings, or to receive dividends or subscription rights or otherwise until this Warrant shall have been exercised and the Shares purchasable upon the exercise hereof shall have become deliverable, as provided herein. Notwithstanding the foregoing, the Company will transmit to the holder of this Warrant such information, documents and reports as are generally distributed to the holders of any class or series of the securities of the Company concurrently with the distribution thereof to the shareholders. The requirements of the foregoing sentence shall be satisfied by the posting of any such information, documents or reports on sec.gov.

9. Registration Rights. The Shares issuable hereunder initially shall be exempt from registration under the Securities Act. Following the Date of Grant, and in any case within ninety (90) days thereof, Company shall promptly prepare, file and use its reasonable efforts to cause to become effective as soon as practicable thereafter, a registration statement on Form S-1 or such other form as may be appropriate to be filed with the SEC by Company under the Act (together with any amendments or supplements thereto, whether prior to or after the effective date thereof, the “Registration Statement”) covering the public resale in the United States of the Shares to be issued pursuant to this Warrant, and Company shall use its reasonable efforts to keep the Registration Statement continuously effective during the Term. Any such registration shall be subject to the customary terms and conditions used in connection with resale prospectuses. Company’s obligations under this Section are contingent upon Holder providing promptly all information concerning such Holder and its proposed plan of distribution as Company may reasonably request in connection with any of the foregoing. Company may by written notice to the Holder immediately suspend the use of any resale prospectus for a period not to exceed sixty consecutive days in any one instance and for a period not to exceed one hundred twenty calendar days in any twelve-month period (each, a “Suspension Period”) at any time that (i) Company becomes engaged in a business activity or negotiation or any other event has occurred or is anticipated which is not disclosed in that prospectus which Company reasonably believes should be disclosed therein under applicable law and which Company desires to keep confidential for business purposes or (ii) Company determines that a particular disclosure so determined to be required to be disclosed therein be premature or would adversely affect Company or its business or prospects. Company will use its commercially reasonable efforts to ensure that the use of the Registration Statement may be resumed as soon as practicable. Company shall bear all costs and expenses associated with the registration of the Shares as specified in this Section and the preparation and filing of the Registration Statement, including, without limitation, all printing expenses, legal fees and disbursement of Company’s outside counsel, commissions, NASDAQ and blue sky registration filing fees and transfer agents’ and registrars’ fees, but not including underwriting commissions or similar charges and legal fees and disbursements of counsel to Holder.

10. Additional Rights.

10.1 Acquisition Transactions. The Company shall provide the holder of this Warrant with at least twenty (20) days' written notice prior to closing thereof of the terms and conditions of any of the following transactions (to the extent the Company has notice thereof): (i) the sale, lease, exchange, conveyance or other disposition of all or substantially all of the Company's property or business, or (ii) its merger into or consolidation with any other corporation (other than a wholly-owned subsidiary of the Company), or any transaction (including a merger or other reorganization) or series of related transactions, in which more than 50% of the voting power of the Company is disposed of.

10.2 Right to Convert Warrant into Stock: Net Issuance.

(a) Right to Convert. In addition to and without limiting the rights of the holder under the terms of this Warrant, the holder shall have the right to convert this Warrant or any portion thereof (the "Conversion Right") into shares of Common Stock as provided in this Section 10.2 at any time or from time to time during the term of this Warrant. Upon exercise of the Conversion Right with respect to a particular number of shares subject to this Warrant (the "Converted Warrant Shares"), the Company shall deliver to the holder (without payment by the holder of any exercise price or any cash or other consideration) that number of shares of fully paid and nonassessable Common Stock as is determined according to the following formula:

$$X = \frac{B - A}{Y}$$

Where: X = the number of Shares that shall be issued to holder

Y = the fair market value of one Share

A = the aggregate Warrant Price of the specified number of Shares immediately prior to the exercise of the Conversion Right (*i.e.*, the number of Shares *multiplied by* the Warrant Price)

B = the aggregate fair market value of the specified number of Shares (*i.e.*, the number of Shares *multiplied by* the fair market value of one Share)

No fractional shares shall be issuable upon exercise of the Conversion Right, and, if the number of shares to be issued determined in accordance with the foregoing formula is other than a whole number, the Company shall pay to the holder an amount in cash equal to the fair market value of the resulting fractional share on the Conversion Date (as hereinafter defined). For purposes of Section 10 of this Warrant, shares issued pursuant to the Conversion Right shall be treated as if they were issued upon the exercise of this Warrant.

(b) Method of Exercise. The Conversion Right may be exercised by the holder by the surrender of this Warrant at the principal office of the Company together with a written statement (which may be in the form of Exhibit A-1 or Exhibit A-2 hereto) specifying that the holder thereby intends to exercise the Conversion Right and indicating the number of shares subject to this Warrant which are being surrendered (referred to in Section 10.2(a) hereof as the Converted Warrant Shares) in exercise of the Conversion Right. Such conversion shall be effective upon receipt by the Company of this Warrant together with the aforesaid written statement, or on such later date as is specified therein (the “Conversion Date”), and, at the election of the holder hereof, may be made contingent upon the closing of the sale of the Company’s Common Stock to the public in a public offering pursuant to a Registration Statement under the Act (a “Public Offering”). Certificates for the shares issuable upon exercise of the Conversion Right and, if applicable, a new warrant evidencing the balance of the shares remaining subject to this Warrant, shall be issued as of the Conversion Date and shall be delivered to the holder within thirty (30) days following the Conversion Date.

(c) Determination of Fair Market Value. For purposes of this Section 10.2, “fair market value” of a share of Common Stock as of a particular date (the “Determination Date”) shall mean:

(i) If the Conversion Right is exercised in connection with and contingent upon a Public Offering, and if the Company’s Registration Statement relating to such Public Offering (“Registration Statement”) has been declared effective by the Securities and Exchange Commission, then the initial “Price to Public” specified in the final prospectus with respect to such offering.

(i i) If the Conversion Right is not exercised in connection with and contingent upon a Public Offering, then as follows:

(A) If traded on a securities exchange, the fair market value of the Common Stock shall be deemed to be the average of the closing prices of the Common Stock on such exchange over the five trading days immediately prior to the Determination Date;

(B) If traded on the NASDAQ Stock Market or other over-the-counter system, the fair market value of the Common Stock shall be deemed to be the average of the closing prices of the Common Stock over the five trading days immediately prior to the Determination Date; and

(C) If there is no public market for the Common Stock, then fair market value shall be determined by mutual agreement of the holder of this Warrant and the Company.

If closing prices or closing bid prices are no longer reported by a securities exchange or other trading system, the closing price or closing bid price shall be that which is reported by such securities exchange or other trading system at 4:00 p.m. New York City time on the applicable trading day.

10.3 Exercise Prior to Expiration. To the extent this Warrant is not previously exercised as to all of the Shares subject hereto, and if the fair market value of one share of the Common Stock is greater than the Warrant Price then in effect, this Warrant shall be deemed automatically exercised pursuant to Section 10.2 above (even if not surrendered) immediately before its expiration. For purposes of such automatic exercise, the fair market value of one share of the Common Stock upon such expiration shall be determined pursuant to Section 10.2(c). To the extent this Warrant or any portion thereof is deemed automatically exercised pursuant to this Section 10.3, the Company agrees to promptly notify the holder hereof of the number of Shares, if any, the holder hereof is to receive by reason of such automatic exercise.

11. Representations and Warranties. The Company represents and warrants to the holder of this Warrant as follows:

(a) This Warrant has been duly authorized and executed by the Company and is a valid and binding obligation of the Company enforceable in accordance with its terms, subject to laws of general application relating to bankruptcy, insolvency and the relief of debtors and the rules of law or principles at equity governing specific performance, injunctive relief and other equitable remedies.

(b) The Shares (other than Next Round Stock securities) have been duly authorized and reserved for issuance by the Company and, when issued in accordance with the terms hereof, will be validly issued, fully paid and nonassessable and free from preemptive rights. Next Round Stock will, prior to issuance, be duly authorized and reserved for issuance by the Company and, when issued in accordance with the terms hereof, will be validly issued, fully paid and nonassessable and free from preemptive rights.

(c) A true and correct copy of the Company's Certificate of Incorporation, as amended through the Date of Grant has been provided to Holder (the "Charter"). The rights, preferences, privileges and restrictions granted to or imposed upon the classes and series of the Company's capital stock and the holders thereof are as set forth in the Charter.

(d) The execution and delivery of this Warrant are not, and the issuance of the Shares upon exercise of this Warrant in accordance with the terms hereof will not be, inconsistent with the Company's Charter or by-laws, do not and will not contravene any law, governmental rule or regulation, judgment or order applicable to the Company, and do not and will not conflict with or contravene any provision of, or constitute a default under, any indenture, mortgage, contract or other instrument of which the Company is a party or by which it is bound or require the consent or approval of, the giving of notice to, the registration or filing with or the taking of any action in respect of or by, any Federal, state or local government authority or agency or other person, except for the filing of notices pursuant to federal and state securities laws, which filings will be effected by the time required thereby.

(e) There are no actions, suits, audits, investigations or proceedings pending or, to the knowledge of the Company, threatened against the Company in any court or before any governmental commission, board or authority which, if adversely determined, could have a material adverse effect on the ability of the Company to perform its obligations under this Warrant.

(f) The number of shares of Common Stock of the Company outstanding on the date hereof, on a fully diluted basis (assuming the conversion of all outstanding convertible securities and the exercise of all outstanding options and warrants other than this Warrant and the Other Warrants), does not exceed 26,000,000 shares.

12. Modification and Waiver. This Warrant and any provision hereof may be changed, waived, discharged or terminated only by an instrument in writing signed by the party against which enforcement of the same is sought.

13. Notices. Any notice, request, communication or other document required or permitted to be given or delivered to the holder hereof or the Company shall be delivered, or shall be sent by certified or registered mail, postage prepaid, to each such holder at its address as shown on the books of the Company or to the Company at the address indicated therefor on the signature page of this Warrant.

14. Binding Effect on Successors. This Warrant shall be binding upon any corporation succeeding the Company by merger, consolidation or acquisition of all or substantially all of the Company's assets, and all of the obligations of the Company relating to the Shares issuable upon the exercise or conversion of this Warrant shall survive the exercise, conversion and termination of this Warrant and all of the covenants and agreements of the Company shall inure to the benefit of the successors and assigns of the holder hereof.

15. Lost Warrants or Stock Certificates. The Company covenants to the holder hereof that, upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant or any stock certificate and, in the case of any such loss, theft or destruction, upon receipt of an indemnity reasonably satisfactory to the Company, or in the case of any such mutilation upon surrender and cancellation of such Warrant or stock certificate, the Company will make and deliver a new Warrant or stock certificate, of like tenor, in lieu of the lost, stolen, destroyed or mutilated Warrant or stock certificate.

16. Descriptive Headings. The descriptive headings of the various Sections of this Warrant are inserted for convenience only and do not constitute a part of this Warrant. The language in this Warrant shall be construed as to its fair meaning without regard to which party drafted this Warrant.

17. Governing Law. This Warrant shall be construed and enforced in accordance with, and the rights of the parties shall be governed by, the laws of the State of Delaware.

18. Survival of Representations, Warranties and Agreements. All representations and warranties of the Company and the holder hereof contained herein shall survive the Date of Grant, the exercise or conversion of this Warrant (or any part hereof) or the termination or expiration of rights hereunder. All agreements of the Company and the holder hereof contained herein shall survive indefinitely until, by their respective terms, they are no longer operative.

19. Remedies. In case any one or more of the covenants and agreements contained in this Warrant shall have been breached, the holders hereof (in the case of a breach by the Company), or the Company (in the case of a breach by a holder), may proceed to protect and enforce their or its rights either by suit in equity and/or by action at law, including, but not limited to, an action for damages as a result of any such breach and/or an action for specific performance of any such covenant or agreement contained in this Warrant.

20. No Impairment of Rights. The Company will not, by amendment of its Charter or through any other means, 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 action as may be necessary or appropriate in order to protect the rights of the holder of this Warrant against impairment.

21. Severability. The invalidity or unenforceability of any provision of this Warrant in any jurisdiction shall not affect the validity or enforceability of such provision in any other jurisdiction, or affect any other provision of this Warrant, which shall remain in full force and effect.

22. Recovery of Litigation Costs. If any legal action or other proceeding is brought for the enforcement of this Warrant, or because of an alleged dispute, breach, default, or misrepresentation in connection with any of the provisions of this Warrant, the successful or prevailing party or parties shall be entitled to recover reasonable attorneys' fees and other costs incurred in that action or proceeding, in addition to any other relief to which it or they may be entitled.

23. Entire Agreement; Modification. This Warrant constitutes the entire agreement between the parties pertaining to the subject matter contained in it and supersedes all prior and contemporaneous agreements, representations, and undertakings of the parties, whether oral or written, with respect to such subject matter.

[Remainder of page intentionally blank. Signature page follows.]

The Company has caused this Warrant to be duly executed and delivered as of the Date of Grant specified above.

TITAN PHARMACEUTICALS, INC.

By: _____
Name: Sunil Bhonsle
Title: Chief Executive Officer and President

Address: 400 Oyster Point Blvd., Suite 505
South San Francisco, CA 94080

[SIGNATURE PAGE TO WARRANT (LOAN A)]

EXHIBIT A-1

NOTICE OF EXERCISE

To: TITAN PHARMACEUTICALS, INC. (the "Company")

1. The undersigned hereby:

- elects to purchase _____ shares of Common Stock of the Company pursuant to the terms of the attached Warrant, and tenders herewith payment of the purchase price of such shares in full, or
- elects to exercise its net issuance rights pursuant to Section 10.2 of the attached Warrant with respect to _____ shares of Common Stock.

2. Please issue a certificate or certificates representing _____ shares in the name of the undersigned or in such other name or names as are specified below:

(Name)

(Address)

3. The undersigned represents that the aforesaid shares are being acquired for the account of the undersigned for investment and not with a view to, or for resale in connection with, the distribution thereof and that the undersigned has no present intention of distributing or reselling such shares, all except as in compliance with applicable securities laws.

(Signature)

(Date)

EXHIBIT A-2

NOTICE OF EXERCISE

To: TITAN PHARMACEUTICALS, INC. (the "Company")

1 . Contingent upon and effective immediately prior to the closing (the "Closing") of the Company's public offering contemplated by the Registration Statement on Form S____, filed_____, 20___, the undersigned hereby:

- elects to purchase _____ shares of Common Stock of the Company (or such lesser number of shares as may be sold on behalf of the undersigned at the Closing) pursuant to the terms of the attached Warrant, or
- elects to exercise its net issuance rights pursuant to Section 10.2 of the attached Warrant with respect to _____ shares of Common Stock.

2. Please deliver to the custodian for the selling shareholders a stock certificate representing such _____ shares.

3 . The undersigned has instructed the custodian for the selling shareholders to deliver to the Company \$ _____ or, if less, the net proceeds due the undersigned from the sale of shares in the aforesaid public offering. If such net proceeds are less than the purchase price for such shares, the undersigned agrees to deliver the difference to the Company prior to the Closing.

(Signature)

(Date)

VENTURE LOAN AND SECURITY AGREEMENT

Dated as of July 27, 2017

by and among

HORIZON TECHNOLOGY FINANCE CORPORATION,
a Delaware corporation
312 Farmington Avenue
Farmington, CT 06032

as a Lender and Collateral Agent

And

TITAN PHARMACEUTICALS, INC.,
a Delaware corporation
400 Oyster Point Blvd., Suite 505
South San Francisco, CA 94080

as Borrower

Loan A Commitment Amount: \$3,500,000

Loan B Commitment Amount: \$3,500,000

Loan C Commitment Amount: \$3,000,000

Loan A Commitment Termination Date: July 31, 2017

Loan B Commitment Termination Date: July 31, 2017

Loan C Commitment Termination Date: March 31, 2018

The Lender, Collateral Agent and Borrower hereby agree as follows:

AGREEMENT

1. Definitions and Construction.

1.1 Definitions. As used in this Agreement, the following capitalized terms shall have the following meanings (such meanings to be equally applicable to both the singular and plural forms of the terms defined):

“Account Control Agreement” means an agreement acceptable to Lender which perfects via control Lender’s and Collateral Agent’s security interest in Borrower’s deposit accounts and/or securities accounts.

“Affiliate” means, with respect to any Person, any other Person that owns or controls directly or indirectly ten percent (10%) or more of the stock of such Person, any other Person that controls or is controlled by or is under common control with such Person and each of such Person’s officers, directors, managers, or partners. For purposes of this definition, the term “control” of a Person means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting Equity Securities, by contract or otherwise and the terms “controlled by” and “under common control with” shall have correlative meanings.

“Agreement” means this certain Venture Loan and Security Agreement by and among Borrower, Collateral Agent and Lender dated as of the date on the cover page hereto (as it may from time to time be amended, modified or supplemented in a writing signed by Borrower, Collateral Agent and Lender).

“Anti-Terrorism Laws” means any laws relating to terrorism or money laundering, including Executive Order No. 13224 (effective September 24, 2001), the USA PATRIOT Act, the laws comprising or implementing the Bank Secrecy Act, and the laws administered by OFAC.

“Borrower” means Borrower as set forth on the cover page of this Agreement.

“Business Day” means any day that is not a Saturday, Sunday, or other day on which banking institutions are authorized or required to close in Connecticut or California.

“Claim” has the meaning given such term in Section 10.3 of this Agreement.

“Code” means the Uniform Commercial Code as adopted and in effect in the State of Connecticut, as amended from time to time; *provided* that if by reason of mandatory provisions of law, the creation and/or perfection or the effect of perfection or non-perfection of the security interest in any Collateral is governed by the Uniform Commercial Code as in effect in a jurisdiction other than the State of Connecticut, the term “Code” shall also mean the Uniform Commercial Code as in effect from time to time in such jurisdiction for purposes of the provisions hereof relating to such creation, perfection or effect of perfection or non-perfection.

“Collateral” has the meaning given such term in Section 4.1 of this Agreement.

“Collateral Agent” means Horizon, or any successor collateral agent appointed by Lender.

“Commitment Amount” means the Loan A Commitment Amount, the Loan B Commitment Amount, or the Loan C Commitment Amount, as applicable.

“Commitment Fee” has the meaning given such term in Section 2.6(c) of this Agreement.

“Consolidated” means the consolidation of accounts in accordance with GAAP.

“Default” means any Event of Default or any event which with the passing of time or the giving of notice or both would become an Event of Default hereunder.

“Default Rate” means the per annum rate of interest equal to five percent (5%) over the Loan Rate, but such rate shall in no event be more than the highest rate permitted by applicable law to be charged on commercial loans in a default situation.

“Disclosure Schedule” means Exhibit A attached hereto.

“Environmental Laws” means all foreign, federal, state or local laws, statutes, common law duties, rules, regulations, ordinances and codes, together with all administrative orders, directed duties, requests, licenses, authorizations and permits of, and agreements with, any Governmental Authorities, in each case relating to environmental, health, safety and land use matters, including the Comprehensive Environmental Response, Compensation and Liability Act of 1980, the Clean Air Act, the Federal Water Pollution Control Act of 1972, the Solid Waste Disposal Act, the Federal Resource Conservation and Recovery Act, the Toxic Substances Control Act and the Emergency Planning and Community Right-to-Know Act.

“Equity Securities” of any Person means (a) all common stock, preferred stock, participations, shares, partnership interests, membership interests or other equity interests in and of such Person (regardless of how designated and whether or not voting or non-voting) and (b) all warrants, options and other rights to acquire any of the foregoing.

“ERISA” has the meaning given to such term in Section 7.12 of this Agreement.

“Event of Default” has the meaning given to such term in Section 8 of this Agreement.

“Funding Certificate” means a certificate executed by a duly authorized Responsible Officer of Borrower substantially in the form of Exhibit B or such other form as Lender may agree to accept.

“Funding Date” means any date on which a Loan is made to or on account of Borrower under this Agreement.

“GAAP” means generally accepted accounting principles as in effect in the United States of America from time to time, consistently applied.

“Good Faith Deposit” has the meaning given such term in Section 2.6(a) of this Agreement.

“Governmental Authority” means (a) any federal, state, county, municipal or foreign government, or political subdivision thereof, (b) any governmental or quasi-governmental agency, authority, board, bureau, commission, department, instrumentality or public body, (c) any court or administrative tribunal, or (d) with respect to any Person, any arbitration tribunal or other non-governmental authority to whose jurisdiction that Person has consented.

“Hazardous Materials” means all those substances which are regulated by, or which may form the basis of liability under, any Environmental Law, including all substances identified under any Environmental Law as a pollutant, contaminant, hazardous waste, hazardous constituent, special waste, hazardous substance, hazardous material, or toxic substance, or petroleum or petroleum derived substance or waste.

“Horizon” means Horizon Technology Finance Corporation.

“Indebtedness” means, with respect to any Person, the aggregate amount of, without duplication, (a) all obligations of such Person for borrowed money, (b) all obligations of such Person evidenced by bonds, debentures, notes or other similar instruments, (c) all obligations of such Person to pay the deferred purchase price of property or services (excluding trade payables aged less than one hundred eighty (180) days), (d) all capital lease obligations of such Person, (e) all obligations or liabilities of others secured by a Lien on any asset of such Person, whether or not such obligation or liability is assumed, (f) all obligations or liabilities of others guaranteed by such Person, and (g) any other obligations or liabilities which are required by GAAP to be shown as debt on the balance sheet of such Person.

“Indemnified Person” has the meaning given such term in Section 10.3 of this Agreement.

“Intellectual Property” means, with respect to any Person, all of such Person’s right, title and interest in and to patents, patent rights (and applications and registrations therefor and divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same), trademarks and service marks (and applications and registrations therefor and the goodwill associated therewith), whether registered or not, inventions, copyrights (including applications and registrations therefor and like protections in each work or authorship and derivative work thereof), whether published or unpublished, mask works (and applications and registrations therefor), trade names, trade styles, software and computer programs, source code, object code, trade secrets, licenses, methods, processes, know how, drawings, specifications, descriptions, and all memoranda, notes, and records with respect to any research and development, all whether now owned or subsequently acquired or developed by such Person and whether in tangible or intangible form or contained on magnetic media readable by machine together with all such magnetic media (but not including embedded computer programs and supporting information included within the definition of “goods” under the Code).

“Internal Revenue Code” has the meaning given such term in Section 5.19 of this Agreement.

“Investment” means the purchase or acquisition of any capital stock, equity interest, or any obligations or other securities of, or any similar interest in, any Person, or the extension of any advance, loan, extension of credit or capital contribution to, or any other investment in, or deposit with, any Person.

“Landlord Agreement” means an agreement substantially in the form provided by Lender to Borrower or such other form as Lender may agree to accept in the exercise of its reasonable discretion.

“Lender” means the Lender as set forth on the cover page of this Agreement.

“Lender’s Expenses” means all reasonable costs or expenses (including reasonable attorneys’ fees and expenses) incurred in connection with the preparation, negotiation, documentation, drafting, amendment, modification, administration, perfection and funding of the Loan Documents; and all of Lender’s reasonable attorneys’ fees, costs and expenses incurred in enforcing or defending the Loan Documents (including reasonable fees and expenses of appeal or review), including the exercise of any rights or remedies afforded hereunder or under applicable law, whether or not suit is brought, whether before or after bankruptcy or insolvency, including all reasonable fees and costs incurred by Lender in connection with such Lender’s enforcement of its rights in a bankruptcy or insolvency proceeding filed by or against Borrower, any Subsidiary or their respective Property.

“Lien” means any voluntary or involuntary security interest, pledge, bailment, lease, mortgage, hypothecation, conditional sales and title retention agreement, encumbrance or other lien with respect to any Property in favor of any Person.

“Loan” means each advance of credit by Lender to Borrower under this Agreement.

“Loan A” means the advance of credit by Lender to Borrower under this Agreement in the Loan A Commitment Amount.

“Loan A Commitment Amount” has the meaning set forth on the cover page of this Agreement.

“Loan A Commitment Termination Date” has the meaning set forth on the cover page of this Agreement.

“Loan A Final Payment” has the meaning given such term in Section 2.2(g) of this Agreement.

“Loan B” means the advance of credit by Lender to Borrower under this Agreement in the Loan B Commitment Amount.

“Loan B Commitment Amount” has the meaning set forth on the cover page of this Agreement.

“Loan B Commitment Termination Date” has the meaning set forth on the cover page of this Agreement.

“Loan B Final Payment” has the meaning given such term in Section 2.2(g) of this Agreement.

“Loan C” means the advance of credit by Lender to Borrower under this Agreement in the Loan C Commitment Amount.

“Loan C Commitment Amount” has the meaning set forth on the cover page of this Agreement.

“Loan C Commitment Termination Date” has the meaning set forth on the cover page of this Agreement.

“Loan C Final Payment” has the meaning given such term in Section 2.2(g) of this Agreement.

“Loan Documents” means, collectively, this Agreement, the Notes, the Warrants, any Landlord Agreement, any Account Control Agreement and all other documents, instruments and agreements entered into in connection with this Agreement, as each may be amended, restated or otherwise modified from time to time.

“Loan Rate” means, with respect to each Loan, the per annum rate of interest equal to 9.50% plus the amount by which the one month LIBOR Rate (rounded to the nearest one hundredth percent), as reported in the Wall Street Journal exceeds 1.10%. Notwithstanding the foregoing, in no event shall the Loan Rate be less than 9.50%.

“Material Adverse Effect” means a material adverse effect on (a) the condition (financial or otherwise), business, or operations of Borrower, (b) the ability of Borrower to perform its Obligations under the Loan Documents or (c) the Collateral or Collateral Agent’s or Lender’s security interest in the Collateral.

“Maturity Date” means, with respect to each Loan, June 1, 2021, or if earlier, the date of acceleration of such Loan following an Event of Default or the date of prepayment, whichever is applicable.

“Note” means each promissory note executed in connection with a Loan in substantially the form of Exhibit C attached hereto.

“Obligations” means all debt, principal, interest, fees, charges, expenses and reasonable attorneys’ fees and costs and other amounts, obligations, covenants, and duties owing by Borrower to Collateral Agent or Lender of any kind and description (whether pursuant to or evidenced by the Loan Documents (other than the Warrants), or by any other agreement between Lender and Borrower (other than the Warrants), and whether or not for the payment of money), whether direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising, including all Lender’s Expenses.

“OFAC” means the Office of Foreign Assets Control of the United States Department of the Treasury.

“Officer’s Certificate” means a certificate executed by a Responsible Officer substantially in the form of Exhibit E or such other form as Lender may agree to accept.

“Payment Date” has the meaning given such term in Section 2.2(a) of this Agreement.

“Permitted Indebtedness” means and includes:

- (a) Indebtedness of Borrower to Lender under the Loan Documents;
- (b) Indebtedness arising from the endorsement of instruments in the ordinary course of business;
- (c) Indebtedness of Borrower existing on the date hereof and set forth on the Disclosure Schedule;
- (d) intercompany Indebtedness owed by any Subsidiary to Borrower or any wholly-owned Subsidiary, as applicable; *provided that*, if applicable, such Indebtedness is also permitted as a Permitted Investment and, in the case of such Indebtedness owed to Borrower, such Indebtedness shall be evidenced by one or more promissory notes;
- (e) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness under subsection (d) above; *provided that* the principal amount thereof is not increased or the terms thereof are not modified to impose materially more burdensome terms upon Borrower.
- (f) unsecured Indebtedness to trade creditors incurred in the ordinary course of business;
- (g) Indebtedness of Borrower secured by Liens permitted under clause (g) of the definition of Permitted Liens, up to an aggregate principal amount of Five Hundred Thousand Dollars (\$500,000) at any one time;
- (h) to the extent constituting or that may constitute Indebtedness, any Equity Securities of Borrower outstanding as of the date hereof, including any preferred stock, warrants, options and other rights to acquire Borrower’s Equity Securities and any payments that may arise thereunder; and
- (i) Indebtedness for deferred compensation to Borrower’s employees, including accrued vacation, in an aggregate amount not to exceed Five Hundred Thousand Dollars (\$500,000) as of the date of this Agreement, provided, however, that commencing on the date that is ninety (90) days after the date of this Agreement, and continuing until the indefeasible repayment in full of the Obligations, the aggregate amount of Indebtedness permitted pursuant to this clause (i) shall not exceed Four Hundred Thousand Dollars (\$400,000).

“Permitted Investments” means and includes any of the following Investments as to which the Collateral Agent and Lender have a perfected security interest:

(a) Deposits and deposit accounts with commercial banks organized under the laws of the United States or a state thereof to the extent: (i) the deposit accounts of each such institution are insured by the Federal Deposit Insurance Corporation up to the legal limit; and (ii) each such institution has an aggregate capital and surplus of not less than One Hundred Million Dollars (\$100,000,000);

(b) Investments in marketable obligations issued or fully guaranteed by the United States, any state thereof or any agency thereof and maturing not more than one (1) year from the date of issuance;

(c) Investments in open market commercial paper rated at least "A1" or "P1" or higher by a national credit rating agency and maturing not more than one (1) year from the creation thereof;

(d) Investments pursuant to or arising under currency agreements or interest rate agreements entered into in the ordinary course of business;

(e) Investments by Borrower and Subsidiaries in their Subsidiaries outstanding on the date hereof;

(f) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of business;

(g) Investments in joint ventures or strategic alliances in the ordinary course of Borrower's business consisting of the licensing of technology, intellectual property and/or product, the development of such technology, intellectual property and/or product or the providing of technical support, provided that any cash Investments by Borrower do not exceed \$100,000 in the aggregate in any fiscal year; and

(h) other Investments aggregating not in excess of One Hundred Thousand Dollars (\$100,000) at any time.

"Permitted Licenses" means and includes (i) non-exclusive licenses of Intellectual Property entered into in the ordinary course of business, (ii) exclusive licenses of Intellectual Property entered into in the ordinary course of business and applicable solely outside the United States, provided that such exclusive licenses could not result in a legal transfer of title of the licensed Intellectual Property and (iii) exclusive licenses of Intellectual Property entered into in the ordinary course of business that are exclusive as to the United States, to the extent consented to by Lender, which consent shall not be unreasonably withheld, conditioned or delayed.

"Permitted Liens" means and includes:

(a) the Liens created by this Agreement;

(b) Liens for fees, taxes, levies, imposts, duties or other governmental charges of any kind which are not yet delinquent or which are being contested in good faith by appropriate proceedings which suspend the collection thereof (*provided* that such appropriate proceedings do not involve any substantial danger of the sale, forfeiture or loss of any material item of Collateral which in the aggregate is material to Borrower and that Borrower has adequately bonded such Lien or reserves sufficient to discharge such Lien have been provided on the books of Borrower);

(c) Liens identified on the Disclosure Schedule;

(d) carriers', warehousemen's, mechanics', materialmen's, repairmen's or other similar Liens arising in the ordinary course of business and which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings (*provided* that such appropriate proceedings do not involve any substantial danger of the sale, forfeiture or loss of any material item of Collateral or Collateral which in the aggregate is material to Borrower and that Borrower has adequately bonded such Lien or reserves sufficient to discharge such Lien have been provided on the books of Borrower);

(e) leases or subleases of real property granted in the ordinary course of Borrower's business, and leases, subleases, non-exclusive licenses or sublicenses of personal property (other than Intellectual Property) granted in the ordinary course of Borrower's business, if the leases, subleases, licenses and sublicenses do not prohibit granting Lender a security interest therein;

(f) leases or subleases granted in the ordinary course of Borrower's business, including in connection with Borrower's leased premises or leased property;

(g) Liens upon any equipment or other personal property acquired by Borrower after the date hereof to secure (i) the purchase price of such equipment or other personal property, or (ii) capital lease obligations or indebtedness incurred solely for the purpose of financing the acquisition of such equipment or other personal property; *provided* that (A) such Liens are confined solely to the equipment or other personal property so acquired and the amount secured does not exceed the acquisition price thereof, and (B) no such Lien shall be created, incurred, assumed or suffered to exist in favor of Borrower's officers, directors or shareholders holding five percent (5%) or more of Borrower's Equity Securities; and

(h) Liens in favor of financial institutions arising solely in connection with Borrower's deposit or securities accounts held at such institutions.

"Person" means and includes any individual, any partnership, any corporation, any business trust, any joint stock company, any limited liability company, any unincorporated association or any other entity and any domestic or foreign national, state or local government, any political subdivision thereof, and any department, agency, authority or bureau of any of the foregoing.

"Property" means any interest in any kind of property or asset, whether real, personal or mixed, whether tangible or intangible.

"Responsible Officer" has the meaning given such term in Section 6.4 of this Agreement.

“Restricted License” means any license or other agreement with respect to which Borrower is the licensee and such license or agreement is material to Borrower’s business and (a) that prohibits or otherwise restricts Borrower from granting a security interest in Borrower’s interest in such license or agreement or any other property or (b) for which a default under or termination of would reasonably be expected to interfere with Collateral Agent’s or Lender’s right to sell any Collateral.

“Rights to Payment” has the meaning given such term in Section 4.1 of this Agreement.

“Sanctions” means any economic or financial sanction administered or enforced by the United States Government (including, without limitation, OFAC and the United States Department of State), the United Nations Security Council, the European Union, Her Majesty’s Treasury of the United Kingdom or other relevant sanctions authority.

“Scheduled Payments” has the meaning given such term in Section 2.2(a) of this Agreement.

“Solvent” has the meaning given such term in Section 5.12 of this Agreement.

“Subsidiary” means any corporation or other entity of which a majority of the outstanding Equity Securities entitled to vote for the election of directors or other governing body (otherwise than as the result of a default) is owned by Borrower directly or indirectly through Subsidiaries.

“Transfer” has the meaning given such term in Section 7.4 of this Agreement.

“Warrant” means the separate warrant or warrants in favor of Lender or its designees to purchase securities of Borrower.

1.2 Construction. References in this Agreement to “Articles,” “Sections,” “Exhibits,” “Schedules” and “Annexes” are to recitals, articles, sections, exhibits, schedules and annexes herein and hereto unless otherwise indicated. References in this Agreement and each of the other Loan Documents to any document, instrument or agreement shall include (a) all exhibits, schedules, annexes and other attachments thereto, (b) all documents, instruments or agreements issued or executed in replacement thereof, and (c) such document, instrument or agreement, or replacement or predecessor thereto, as amended, modified and supplemented from time to time and in effect at any given time (subject, in the case of clauses (b) and (c), to any restrictions on such replacement, amendment, modification or supplement set forth in the Loan Documents). The words “hereof,” “herein” and “hereunder” and words of similar import when used in this Agreement or any other Loan Document shall refer to this Agreement or such other Loan Document, as the case may be, as a whole and not to any particular provision of this Agreement or such other Loan Document, as the case may be. The words “include” and “including” and words of similar import when used in this Agreement or any other Loan Document shall not be construed to be limiting or exclusive. Unless the context requires otherwise, any reference in this Agreement or any other Loan Document to any Person shall be construed to include such Person’s successors and assigns. Unless otherwise indicated in this Agreement or any other Loan Document, all accounting terms used in this Agreement or any other Loan Document shall be construed, and all accounting and financial computations hereunder or thereunder shall be computed, in accordance with GAAP, and all terms describing Collateral shall be construed in accordance with the Code. The terms and information set forth on the cover page of this Agreement are incorporated into this Agreement.

2. Loans; Repayment.

2.1 Commitments.

(a) The Commitment Amounts. Subject to the terms and conditions of this Agreement and relying upon the representations and warranties herein set forth as and when made or deemed to be made, Lender agrees to lend to Borrower prior to the Loan A Commitment Termination Date, Loan A, prior to the Loan B Commitment Termination Date, Loan B, and prior to the Loan C Commitment Termination Date, Loan C.

(b) The Loans and the Notes. The obligation of Borrower to repay the unpaid principal amount of and interest on each Loan shall be evidenced by a Note issued to the Lender.

(c) Use of Proceeds. The proceeds of each Loan shall be used solely for working capital or general corporate purposes of Borrower.

(d) Termination of Commitment to Lend. Notwithstanding anything in the Loan Documents, Lender's obligation to lend the undisbursed portion of the Commitment Amount to Borrower hereunder shall terminate on the earlier of (i) at Lender's sole election, the occurrence of any Default or Event of Default hereunder, and (ii) with respect to Loan A, the Loan A Commitment Termination Date, with respect to Loan B, the Loan B Commitment Termination Date and with respect to Loan C, the Loan C Commitment Termination Date. Notwithstanding the foregoing, Lender's obligation to lend the undisbursed portion of the Commitment Amount to Borrower shall terminate if, in Lender's sole discretion, there has been a material adverse change in the general affairs, management, results of operations or condition (financial or otherwise) of Borrower, whether or not arising from transactions in the ordinary course of business, or there has been any material adverse deviation by Borrower from the business plan of Borrower presented to Lenders on or before the date of this Agreement.

2.2 Payments.

(a) Scheduled Payments.

(i) Loan A and Loan B. Borrower shall make (i) a payment of accrued interest only to Lender on the outstanding principal amount of Loan A and Loan B on the Payment Dates specified in the Note applicable to each such Loan and (ii) an equal payment of principal plus accrued interest to Lender on the outstanding principal amount of Loan A and Loan B on the Payment Dates as set forth in the Note applicable to each such Loan (collectively, the "Loan A and Loan B Scheduled Payments"). Borrower shall make such Loan A and Loan B Scheduled Payments commencing on the date set forth in the Notes applicable to such Loans and continuing thereafter on the first Business Day of each calendar month (each a "Payment Date") through the Maturity Date. In any event, all unpaid principal and accrued interest shall be due and payable in full on the Maturity Date.

(ii) Loan C. Borrower shall make (i) a payment of accrued interest only to Lender on the outstanding principal amount of Loan C commencing on the Payment Date immediately following the Funding Date applicable to Loan C and continuing on each Payment Date through and including December 1, 2018 and (ii) an equal payment of principal plus accrued interest to Lender on the outstanding principal amount of Loan C on the next thirty (30) Payment Dates as set forth in the Note applicable to such Loan (collectively, the “Loan C Scheduled Payments” and collectively with the Loan A and Loan B Scheduled Payments, the “Scheduled Payments”). Borrower shall make such Loan C Scheduled Payments commencing on the date set forth in the Note applicable to such Loan and continuing each Payment Date through the Maturity Date. In any event, all unpaid principal and accrued interest shall be due and payable in full on the Maturity Date.

(b) Interim Payment. Unless the Funding Date for a Loan is the first day of a calendar month, Borrower shall pay the per diem interest (accruing at the Loan Rate from the Funding Date through the last day of that month) payable with respect to such Loan on the first Business Day of the next calendar month.

(c) Payment of Interest. Borrower shall pay interest on each Loan at a per annum rate of interest equal to the Loan Rate. The Loan Rate shall initially be calculated using the LIBOR Rate reported in the Wall Street Journal on the date which is five (5) Business Days prior to the proposed date of disbursement of the Loan, but shall thereafter be calculated for each calendar month using the LIBOR Rate reported in the Wall Street Journal on the first calendar day of such month, provided, however, that if the first calendar day of any month is not a Business Day, the Loan Rate shall be calculated using the LIBOR Rate reported in the Wall Street Journal on the Business Day immediately preceding the first calendar day of such month. Interest (including interest at the Default Rate, if applicable) shall be computed on the basis of a 360-day year for the actual number of days elapsed. Notwithstanding any other provision hereof, the amount of interest payable hereunder shall not in any event exceed the maximum amount permitted by the law applicable to interest charged on commercial loans.

(d) Application of Payments. All payments received by Lender prior to an Event of Default shall be applied as follows: (i) first, to Lender’s Expenses then due and owing; and (ii) second, ratably, to all Scheduled Payments then due and owing (*provided*, however, if such payments are not sufficient to pay the whole amount then due, such payments shall be applied first to unpaid interest at the Loan Rate, then to the remaining amounts then due). After the occurrence and during the continuation of an Event of Default, all payments and application of proceeds shall be made as set forth in Section 9.7.

(e) Late Payment Fee. Borrower shall pay to Lender a late payment fee equal to six percent (6%) of any Scheduled Payment not paid to Lender within two (2) Business Days of the applicable Payment Date or Maturity Date..

(f) Default Rate. Following the occurrence and during the continuation of an Event of Default, Borrower shall pay interest at a per annum rate equal to the Default Rate on any amounts required to be paid by Borrower to Collateral Agent or Lender under this Agreement or the other Loan Documents (including Scheduled Payments), payable with respect to any Loan, accrued and unpaid interest, and any fees or other amounts which remain unpaid after such amounts are due. If an Event of Default has occurred and the Obligations have been accelerated (whether automatically or by Lender’s election), Borrower shall pay interest on the aggregate, outstanding accelerated balance hereunder from the date of the Event of Default until all Events of Default are cured, at a per annum rate equal to the Default Rate.

(g) Final Payment.

(i) Loan A Final Payment. Borrower shall pay to Lender a payment in the amount of One Hundred Seventy-Five Thousand Dollars (\$175,000) (the "Loan A Final Payment") upon the earlier of (A) payment in full of the principal balance of Loan A, (B) an Event of Default and demand by Lender of payment in full of Loan A or (C) the Maturity Date, as applicable.

(ii) Loan B Final Payment. Borrower shall pay to Lender a payment in the amount of One Hundred Seventy-Five Thousand Dollars (\$175,000) (the "Loan B Final Payment") upon the earlier of (A) payment in full of the principal balance of Loan B, (B) an Event of Default and demand by Lender of payment in full of Loan B or (C) the Maturity Date, as applicable.

(iii) Loan C Final Payment. Borrower shall pay to Lender a payment in the amount of One Hundred Fifty Thousand Dollars (\$150,000) (the "Loan C Final Payment") upon the earlier of (A) payment in full of the principal balance of Loan C, (B) an Event of Default and demand by Lender of payment in full of Loan C or (C) the Maturity Date, as applicable.

2.3 Prepayments.

(a) Mandatory Prepayment Upon an Acceleration. If the Loans are accelerated following the occurrence of an Event of Default pursuant to Section 9.1(a) hereof, then Borrower, in addition to any other amounts which may be due and owing hereunder, shall immediately pay to Lender the amount set forth in Section 2.3(b) below, as if Borrower had opted to prepay on the date of such acceleration.

(b) Optional Prepayment. Upon ten (10) Business Days' prior written notice to Lender, Borrower may, at its option, at any time, prepay all (and not less than all) of the outstanding Loans by simultaneously paying to Lender an amount equal to (i) any accrued and unpaid interest on the outstanding principal balance of the Loans; *plus* (ii) an amount equal to (A) if the Loans are prepaid on or before December 31, 2018, four percent (4%) of the then outstanding principal balance of the Loans, (B) if the Loans are prepaid after December 31, 2018 but on or before December 31, 2019, three percent (3%) of the then outstanding principal balance of the Loans, or (C) if the Loans are prepaid after December 31, 2019, two percent (2%) of the then outstanding principal balance of the Loans; *plus* (iii) the outstanding principal balance of the Loans; *plus* (iv) all other sums, if any, that shall have become due and payable hereunder.

2.4 Other Payment Terms.

(a) Place and Manner. Borrower shall make all payments due to Lender in lawful money of the United States. All payments of principal, interest, fees and other amounts payable by Borrower hereunder shall be made, in immediately available funds, not later than 3:00 p.m. Connecticut time, on the date on which such payment is due. Borrower shall make such payments to Lender via wire transfer or ACH as instructed by Lender from time to time.

(b) Date. Whenever any payment is due hereunder on a day other than a Business Day, such payment shall be made on the next succeeding Business Day, and such extension of time shall be included in the computation of interest or fees, as the case may be.

(c) Taxes.

(i) Unless otherwise required under applicable law, any and all payments made hereunder or under the Notes shall be made free and clear of and without deduction for any taxes; *provided* that if Borrower shall be required to deduct any taxes from such payments, then (A) the sum payable shall be increased as necessary so that after making all required deductions (including deductions applicable to additional sums payable under this Section 2.4(c)) the Lender receives an amount equal to the sum it would have received had no such deductions been made, (B) Borrower shall make such deductions and (C) Borrower shall pay the full amount deducted to the relevant Governmental Authority in accordance with applicable law.

(ii) Borrower shall indemnify Lender, within 10 days after written demand therefor, for the full amount of any taxes imposed or asserted directly on Lender by any Governmental Authority on or attributable to amounts payable under this Agreement solely as a result of Lender entering into this Agreement to the extent such taxes are paid by Lender, and any penalties, interest and reasonable expenses arising therefrom or with respect thereto, whether or not such taxes were correctly or legally imposed or asserted by the relevant Governmental Authority; *provided*, however, that such indemnified taxes shall not include income or franchise taxes imposed on (or measured by) Lender's net income by the jurisdiction, or any political subdivision thereof or taxing authority therein, under the laws of which such recipient is organized or in which its principal office is located or in which its applicable lending office is located. A certificate as to the amount of such payment or liability delivered to Borrower by Lender shall be conclusive absent manifest error.

(iii) As soon as practicable after any payment of taxes by Borrower hereunder to a Governmental Authority, Borrower shall deliver to Lender the original or a certified copy of a receipt issued by such Governmental Authority evidencing such payment, a copy of the return reporting such payment or other evidence of such payment reasonably satisfactory to Lender.

(iv) If Lender is entitled to an exemption from or reduction of withholding tax under the law of the jurisdiction in which Borrower is located, or any treaty to which such jurisdiction is a party, with respect to payments under this Agreement, Lender shall deliver to Borrower, as reasonably requested by Borrower, such properly completed and executed documentation prescribed by applicable law as will permit such payments to be made without withholding or at a reduced rate.

(v) If Lender receives a refund in respect of taxes paid by Borrower pursuant to this Section 2.4(c), which in the reasonable discretion of Lender exercised in good faith is allocable to such payment, it shall promptly pay such refund, together with any other amounts paid by Borrower in connection with such refunded taxes, to Borrower, net of all out-of-pocket expenses (including any taxes to which Lender has become subject as a result of its receipt of such refund) of Lender incurred in obtaining such refund and without interest (other than any interest paid by the relevant Governmental Authority with respect to such refund); *provided* that Borrower, upon the request of the Lender, shall repay to Lender amounts paid over pursuant to the preceding clause (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) in the event that Lender is required to repay such refund to such Governmental Authority. Notwithstanding anything to the contrary in this paragraph (v), in no event will Lender be required to pay any amount to Borrower pursuant to this paragraph (v) the payment of which would place Lender in a less favorable net after-tax position than Lender would have been in if the indemnification payments or additional amounts giving rise to such refund had never been paid. This paragraph shall not be construed to require Lender to make available its tax returns (or any other information relating to its taxes that it deems confidential) to Borrower or any other Person.

2.5 Procedure for Making the Loans.

(a) Notice. Borrower shall notify Lender of the date on which Borrower desires Lender to make any Loan at least five (5) Business Days in advance of the desired Funding Date, unless the Lender elects at its sole discretion to allow the Funding Date for a Loan to be made by Lender to be within five (5) Business Days of Borrower's notice. Lender acknowledges that Borrower has satisfied the five (5) Business Day notice requirement with respect to Loan A and Loan B which shall be advanced by Lender to Borrower on the date of this Agreement. Borrower's execution and delivery to Lender of one or more Notes in respect of a Loan shall be Borrower's agreement to the terms and calculations thereunder with respect to such Loan. Lender's obligation to make any Loan shall be expressly subject to the satisfaction of the conditions set forth in Section 3.

(b) Loan Rate Calculation. Prior to each Funding Date for any Loan, Lender shall establish the Loan Rate with respect to such Loan, which shall be set forth in the Note to be executed by Borrower with respect to such Loan and shall be conclusive in the absence of a manifest error.

(c) Disbursement. Lender shall disburse the proceeds of each Loan by wire transfer to Borrower at the account specified in the Funding Certificate for such Loan.

2.6 Good Faith Deposit; Legal and Closing Expenses; and Commitment Fee.

(a) Good Faith Deposit. Borrower has delivered to Horizon a good faith deposit in the amount of Fifty Thousand Dollars (\$50,000) (the "Good Faith Deposit"). The Good Faith Deposit paid to Horizon will be credited to the Commitment Fee payable to the Lender. If the Funding Date for Loan A and Loan B does not occur based on Borrower's election not to proceed with the financing, Lender shall retain the Good Faith Deposit as compensation for its time, expenses and opportunity cost. If the Funding Date for Loan A and Loan B does not occur based on Lender's election not to proceed with the financing, Lender shall retain from the Good Faith Deposit its documented Lender's Expenses and promptly return the balance thereof to Borrower.

(b) Legal, Due Diligence and Documentation Expenses. Concurrently with its execution and delivery of this Agreement, Borrower shall pay to Lender all of Lender's reasonable legal, due diligence and documentation expenses in connection with the negotiation and documentation of this Agreement and the Loan Documents.

(c) Commitment Fee. Borrower shall pay, concurrently with its execution and delivery of this Agreement, a commitment fee to Lender in the amount of One Hundred Thousand Dollars (\$100,000) (the "Commitment Fee"). The Commitment Fee shall be retained by the Lender and be deemed fully earned upon receipt.

3. Conditions of Loan.

3.1 Conditions Precedent to Closing. At the time of the execution and delivery of this Agreement, Lender shall have received, in form and substance reasonably satisfactory to Lender, all of the following (unless Lender has agreed to waive such condition or document, in which case such condition or document shall be a condition precedent to the making of any Loan and shall be deemed added to Section 3.2):

(a) Loan Agreement. This Agreement duly executed by Borrower, Collateral Agent and Lender.

(b) Secretary's Certificate. A certificate of the secretary or assistant secretary of Borrower, dated as of the date hereof, with copies of the following documents attached: (i) the certificate of incorporation and bylaws (or equivalent documents) of Borrower certified by Borrower as being complete and in full force and effect on the date thereof, (ii) incumbency and representative signatures, and (iii) resolutions authorizing the execution and delivery of this Agreement and each of the other Loan Documents.

(c) Good Standing Certificates. A good standing certificate from Borrower's state of organization and the state in which Borrower's principal place of business is located, each dated as of a date no earlier than thirty (30) days prior to the date hereof.

(d) Certificate of Insurance. Evidence of the insurance coverage required by Section 6.8 of this Agreement.

(e) Consents. All necessary consents of shareholders and other third parties with respect to the execution, delivery and performance of this Agreement, the Warrants and the other Loan Documents.

(f) Legal Opinion. A legal opinion of Borrower's counsel, dated as of the date hereof, covering the matters set forth in Exhibit D hereto.

(g) Account Control Agreements. Account Control Agreements for all of Borrower's deposit accounts and securities accounts (to the extent required under Section 7.13 of this Agreement) duly executed by all of the parties thereto.

(h) Fees and Expenses. Payment of all fees and expenses then due hereunder or under any other Loan Document.

(i) Other Documents. Such other documents and completion of such other matters, as Lender may reasonably deem necessary or appropriate.

3.2 Conditions Precedent to Making Loan A and Loan B. The obligation of Lender to make Loan A and Loan B is further subject to satisfaction of the following conditions as of the applicable Funding Date:

(a) No Default. No Default or Event of Default shall have occurred and be continuing.

(b) Landlord Agreements. Borrower shall have provided Lender with a Landlord Agreement for each location where Borrower's books and records and the Collateral (other than (i) clinical trial materials, (ii) laptops and similar equipment maintained by Borrower's employees, (iii) research materials maintained at contract research and storage facilities, and (iv) other Collateral with an aggregate value of not more than \$100,000) is located (unless Borrower is the fee owner thereof).

(c) Notes. Borrower shall have duly executed and delivered a Note in the amount of the Loan A and a Note in the amount of Loan B to Lender.

(d) UCC Financing Statements. Lender shall have received such documents, instruments and agreements, including UCC financing statements or amendments to UCC financing statements and UCC financing statement searches, as Lender shall reasonably request to evidence the perfection and priority of the security interests granted to Collateral Agent and Lender pursuant to Section 4. Borrower authorizes Collateral Agent and Lender to file any UCC financing statements, continuations of or amendments to UCC financing statements they deem necessary to perfect its security interest in the Collateral.

(e) Funding Certificate. Borrower shall have duly executed and delivered to Lender a Funding Certificate for such Loans.

(f) Representations and Warranties. The representations and warranties made by Borrower in Section 5 and in the other Loan Documents shall be true and correct in all material respects (except for any representation and warranty qualified by materiality, in which case such representation or warranty shall be true and correct in all respects) as of such Funding Date. (except for any representations and warranties that specifically relate to a prior date, which shall be true and correct in all material respects as of such earlier date).

(g) Warrants. Borrower shall have executed and delivered to Lender the Warrants.

(h) Other Documents. Borrower shall have provided Lender with such other documents and completion of such other matters, as Lender may reasonably deem necessary or appropriate.

3.3 Conditions Precedent to Making Loan C. The obligation of Lender to make Loan C is further subject to satisfaction of the following conditions as of the applicable Funding Date:

(a) No Default. No Default or Event of Default shall have occurred and be continuing.

(b) Note. Borrower shall have duly executed and delivered a Note in the amount of the Loan C to Lender.

(c) Funding Certificate. Borrower shall have duly executed and delivered to Lender a Funding Certificate for such Loans.

(d) Royalty Revenue. Borrower shall have provided Lender with evidence reasonably satisfactory to Lender that Borrower, during the period commencing as of January 1, 2017 and continuing through December 31, 2017, has achieved revenue (as determined in accordance with GAAP) resulting from royalty payments of not less than Seven Hundred Fifty Thousand Dollars (\$750,000).

(e) European Partnership. Borrower shall have provided Lender with evidence reasonably satisfactory to Lender that Borrower has executed a partnership or similar agreement for the marketing and sale of "Probuphine" in Europe, which agreement shall be satisfactory to Lender in its sole discretion.

(f) Market Capitalization. Borrower shall have provided Lender with evidence reasonably satisfactory to Lender that Borrower's market capitalization during each of the ten (10) trading days immediately prior to the Funding Date of Loan C has been not less than Fifty Million Dollars (\$50,000,000).

(g) Representations and Warranties. The representations and warranties made by Borrower in Section 5 and in the other Loan Documents shall be true and correct in all material respects (except for any representation and warranty qualified by materiality, in which case such representation or warranty shall be true and correct in all respects) as of such Funding Date (except for any representations and warranties that specifically relate to a prior date, which shall be true and correct in all material respects as of such earlier date).

(h) Other Documents. Borrower shall have provided Lender with such other documents and completion of such other matters, as Lender may reasonably deem necessary or appropriate.

3.4 Covenant to Deliver. Borrower agrees (not as a condition but as a covenant) to deliver to Lender each item required to be delivered to Lender as a condition to each Loan, if such Loan is advanced. Borrower expressly agrees that the extension of any Loan prior to the receipt by Lender of any such item shall not constitute a waiver by Lender of Borrower's obligation to deliver such item, and any such extension in the absence of a required item shall be in each Lender's sole discretion.

4. Creation of Security Interest.

4.1 Grant of Security Interests. Borrower grants to Collateral Agent and Lender a valid, continuing security interest in all presently existing and hereafter acquired or arising Collateral in order to secure prompt, full and complete payment of any and all Obligations and in order to secure prompt, full and complete performance by Borrower of each of its covenants and duties under each of the Loan Documents (other than the Warrants). The "Collateral" shall mean and include all right, title, interest, claims and demands of Borrower in the following:

(a) All goods (and embedded computer programs and supporting information included within the definition of "goods" under the Code) and equipment now owned or hereafter acquired, including all laboratory equipment, computer equipment, office equipment, machinery, fixtures, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing, and all attachments, accessories, accessions, replacements, substitutions, additions, and improvements to any of the foregoing, wherever located;

(b) All inventory now owned or hereafter acquired, including all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products including such inventory as is temporarily out of Borrower's custody or possession or in transit and including any returns upon any accounts or other proceeds, including insurance proceeds, resulting from the sale or disposition of any of the foregoing and any documents of title representing any of the above, and Borrower's books relating to any of the foregoing;

(c) All contract rights and general intangibles (except to the extent included within the definition of Intellectual Property), now owned or hereafter acquired, including goodwill, license agreements, franchise agreements, blueprints, drawings, purchase orders, customer lists, route lists, infringements, claims, software, computer programs, computer disks, computer tapes, literature, reports, catalogs, design rights, income tax refunds, payment intangibles, commercial tort claims, payments of insurance and rights to payment of any kind;

(d) All now existing and hereafter arising accounts, contract rights, royalties, license rights, license fees and all other forms of obligations owing to Borrower arising out of the sale or lease of goods, the licensing of technology or the rendering of services by Borrower (subject, in each case, to the contractual rights of third parties to require funds received by Borrower to be expended in a particular manner), whether or not earned by performance, and any and all credit insurance, guaranties, and other security therefor, as well as all merchandise returned to or reclaimed by Borrower and Borrower's books relating to any of the foregoing;

(e) All documents, cash, deposit accounts, letters of credit and letters of credit rights (whether or not the letter of credit is evidenced by a writing) and other supporting obligations, certificates of deposit, instruments, promissory notes, chattel paper (whether tangible or electronic) and investment property, including all securities, whether certificated or uncertificated, security entitlements, securities accounts, commodity contracts and commodity accounts, and all financial assets held in any securities account or otherwise, wherever located, now owned or hereafter acquired and Borrower's books relating to the foregoing; and

(f) To the extent not covered by clauses (a) through (e), all other personal property of the Borrower, whether tangible or intangible, and any and all rights and interests in any of the above and the foregoing and, any and all claims, rights and interests in any of the above and all substitutions for, additions and accessions to and proceeds thereof, including insurance, condemnation, requisition or similar payments and proceeds of the sale or licensing of Intellectual Property to the extent such proceeds no longer constitute Intellectual Property.

Notwithstanding the foregoing, the Collateral shall not include any Intellectual Property; *provided, however*, that the Collateral shall include all accounts receivables, accounts, and general intangibles that consist of rights to payment and proceeds from the sale, licensing or disposition of all or any part, or rights in, the foregoing (the “Rights to Payment”). Notwithstanding the foregoing, if a judicial authority (including a U.S. Bankruptcy Court) holds that a security interest in the underlying Intellectual Property is necessary to have a security interest in the Rights to Payment, then the Collateral shall automatically, and effective as of the date hereof, include the Intellectual Property solely to the extent necessary to permit perfection of Lender’s security interest in the Rights to Payment.

4.2 After-Acquired Property. If Borrower shall at any time acquire a commercial tort claim, as defined in the Code with a value in excess of Fifty Thousand Dollars (\$50,000), Borrower shall promptly notify Collateral Agent and Lender in writing signed by Borrower of the brief details thereof and grant to Collateral Agent and Lender in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance satisfactory to Collateral Agent and Lender.

4.3 Duration of Security Interest. Collateral Agent’s and Lender’s security interest in the Collateral shall continue until the indefeasible payment in full and the satisfaction of all Obligations, and termination of Lender’s commitment to fund the Loans, whereupon such security interest shall terminate. Collateral Agent and Lender shall, at Borrower’s sole cost and expense, execute such further documents and take such further actions as may be reasonably necessary to make effective the release contemplated by this Section 4.3, including duly authorizing and delivering termination statements for filing in all relevant jurisdictions under the Code.

4.4 Location and Possession of Collateral. The Collateral (other than (i) clinical trial materials, (ii) laptops and similar equipment maintained by Borrower’s employees, (iii) research materials maintained at contract research and storage facilities, and (iv) other Collateral with an aggregate value of not more than \$100,000) is and shall remain in the possession of Borrower at its location listed on the cover page hereof or as set forth in the Disclosure Schedule or at such other location(s) as to which Borrower has provided written notice to Collateral Agent. Borrower shall remain in full possession, enjoyment and control of the Collateral (other than (i) clinical trial materials, (ii) laptops and similar equipment maintained by Borrower’s employees, (iii) research materials maintained at contract research and storage facilities, and (iv) other Collateral with an aggregate value of not more than \$100,000 and otherwise except only as may be required by Collateral Agent or Lender for perfection of the security interests therein created hereunder) and so long as no Event of Default has occurred, shall be entitled to manage, operate, dispose of and use the same and each part thereof with the rights and franchises appertaining thereto; *provided* that the possession, enjoyment, control and use of the Collateral shall at all times be subject to the observance and performance of the terms of this Agreement.

4.5 Delivery of Additional Documentation Required. Borrower shall from time to time execute and deliver to Collateral Agent and Lender, at the request of Collateral Agent or Lender, all financing statements and other documents Collateral Agent or Lender may reasonably request, in form reasonably satisfactory to Collateral Agent and Lender, to perfect and continue Collateral Agent's and Lender's perfected security interests in the Collateral and in order to consummate fully all of the transactions contemplated under the Loan Documents.

4.6 Right to Inspect. Collateral Agent and Lender (through any of their officers, employees, or agents) shall have the right, upon reasonable prior notice, from time to time during Borrower's usual business hours, to inspect the books and records of Borrower and Subsidiaries and to make copies thereof and to inspect, test, and appraise the Collateral in order to verify Borrower's financial condition or the amount, condition of, or any other matter relating to, the Collateral; provided that prior to an Event of Default, Collateral Agent and Lender shall make such inspections, in the aggregate, not more than twice in any calendar year. Any inspection, test or appraisal conducted hereunder shall be done at the sole cost and expense of Borrower.

4.7 Protection of Intellectual Property. Borrower shall:

(a) protect, defend and maintain the validity and enforceability of its Intellectual Property material to Borrower's business (as determined by Borrower in its reasonable judgment) and promptly advise Collateral Agent in writing of material infringements;

(b) not allow any Intellectual Property material to Borrower's business to be abandoned, forfeited or dedicated to the public without Lender's written consent, which consent shall not be unreasonably withheld or delayed;

(c) provide written notice to the Collateral Agent within ten (10) days after entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public); and

(d) take such commercially reasonable steps as Collateral Agent or Lender requests to obtain the consent of, or waiver by, any person whose consent or waiver is necessary for Collateral Agent and Lender to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Collateral Agent's or Lender's rights and remedies under this Agreement and the other Loan Documents.

4.8 Notice of Exclusive Control. Neither Lender nor Agent shall deliver a notice of exclusive control to any financial institution at which Borrower's deposit accounts and/or securities accounts covered by an Account Control Agreement are maintained unless an Event of Default shall have occurred that has not been waived.

5. Representations and Warranties. Except as set forth in the Disclosure Schedule, Borrower represents and warrants as follows:

5.1 Organization and Qualification. Each of Borrower and its Subsidiaries is a corporation duly organized and validly existing under the laws of its state of incorporation and qualified and licensed to do business in, and is in good standing in, any jurisdiction in which the conduct of its business or its ownership of Property requires that it be so qualified and licensed or in which the Collateral is located, except for such states as to which failure to so qualify would not have a Material Adverse Effect.

5.2 Authority. Borrower has all necessary power and authority to execute, deliver, and perform its obligations in accordance with the terms thereof, the Loan Documents to which it is a party. Borrower and Subsidiaries have all requisite power and authority to own and operate their Property and to carry on their businesses as now conducted. Borrower and Subsidiaries have obtained all licenses, permits, approvals and other authorizations necessary for the operation of their business.

5.3 Conflict with Other Instruments, etc. Neither the execution and delivery of any Loan Document to which Borrower is a party nor the consummation of the transactions therein contemplated nor compliance with the terms, conditions and provisions thereof will conflict with or result in a breach of any of the terms, conditions or provisions of the certificate of incorporation, the by-laws, or any other organizational documents of Borrower or any law or any regulation, order, writ, injunction or decree of any court or Governmental Authority by which Borrower or any Subsidiary or any of their respective property or assets may be bound or affected or any material agreement or instrument to which Borrower is a party or by which it or any of its Property is bound or to which it or any of its Property is subject, or constitute a default thereunder or result in the creation or imposition of any Lien, other than Permitted Liens.

5.4 Authorization; Enforceability. The execution and delivery of this Agreement, the granting of the security interest in the Collateral, the incurrence of the Loans, the execution and delivery of the other Loan Documents to which Borrower is a party and the consummation of the transactions herein and therein contemplated have each been duly authorized by all necessary action on the part of Borrower. No authorization, consent, approval, license or exemption of, and no registration, qualification, designation, declaration or filing with, or notice to, any Person is, was or will be necessary to (a) the valid execution and delivery of any Loan Document to which Borrower is a party, (b) the performance of Borrower's obligations under any Loan Document or (c) the granting of the security interest in the Collateral, except for filings in connection with the perfection of the security interest in any of the Collateral or the issuance of the Warrants. The Loan Documents have been duly executed and delivered and constitute legal, valid and binding obligations of Borrower, enforceable against Borrower in accordance with their respective terms, except as the enforceability thereof may be limited by bankruptcy, insolvency or other similar laws of general application relating to or affecting the enforcement of creditors' rights or by general principles of equity.

5.5 No Prior Encumbrances. Borrower has good and marketable title to the Collateral, free and clear of Liens except for Permitted Liens. Borrower has good title and ownership of, or is licensed under, all of Borrower's current Intellectual Property. Borrower is the sole owner of the Intellectual Property which it owns or purports to own except for (a) non-exclusive licenses granted to its customers, resellers and/or distributors in the ordinary course of business, (b) over-the-counter software that is commercially available to the public and (c) material Intellectual Property licensed to Borrower (other than off-the-shelf software) and noted on the Disclosure Schedule. Each patent which it owns or purports to own and which is material to Borrower's business is valid and enforceable, and no part of the Intellectual Property which Borrower owns or purports to own and which is material to Borrower's business has been judged invalid or unenforceable, in whole or in part. Except as noted on the Disclosure Schedule, Borrower is not a party to, nor is it bound by, any Restricted License. Borrower has not received any communications alleging that Borrower has violated, or by conducting its business as proposed, would violate any proprietary rights of any other Person, in each case that could reasonably be expected to have a Material Adverse Effect. Borrower has no knowledge of any infringement or violation by it of the intellectual property rights of any third party and has no knowledge of any violation or infringement by a third party of any of its Intellectual Property. The Collateral and the Intellectual Property constitute substantially all of the assets and property of Borrower, and Borrower owns all Intellectual Property associated with the business of Borrower and Subsidiaries, free and clear of any Liens other than Permitted Liens.

5.6 Security Interest. The provisions of this Agreement create legal and valid security interests in the Collateral in favor of the Collateral Agent and Lender, and, assuming the proper filing of one or more financing statement(s) identifying the Collateral with the proper state and/or local authorities, the security interests in the Collateral granted to Collateral Agent and Lender pursuant to this Agreement (a) constitute and will continue to constitute first priority security interests (except to the extent any Permitted Liens may have a superior priority to Collateral Agent's and Lender's Lien under this Agreement) and (b) are and will continue to be superior and prior to the rights of all other creditors of Borrower (except to the extent of such Permitted Liens).

5.7 Name; Location of Chief Executive Office, Principal Place of Business and Collateral. Borrower has not done business under any name other than that specified on the signature page hereof. Borrower's jurisdiction of incorporation, chief executive office, principal place of business, and the place where Borrower maintains its records concerning the Collateral are presently located in the state and at the address set forth on the cover page of this Agreement. The Collateral is presently located at the address set forth on the cover page hereof or as set forth in the Disclosure Schedule or at such locations permitted under Section 7.2 of this Agreement.

5.8 Litigation. There are no actions or proceedings pending by or against Borrower or any Subsidiary before any court, arbitral tribunal, regulatory organization, administrative agency or similar body in which an adverse decision could have a Material Adverse Effect. Borrower does not have knowledge of any such pending or threatened actions or proceedings.

5.9 Financial Statements. All financial statements relating to Borrower, any Subsidiary or any Affiliate that have been delivered by Borrower to Collateral Agent or Lender present fairly in all material respects Borrower's Consolidated financial condition as of the date thereof and Borrower's Consolidated results of operations for the period then ended.

5.10 No Material Adverse Effect. No event has occurred and no condition exists which could reasonably be expected to have a Material Adverse Effect since December 31, 2016.

5.11 Full Disclosure. No representation, warranty or other statement made by Borrower in any Loan Document (including the Disclosure Schedule), certificate or written statement furnished to Collateral Agent or Lender (other than projections, forward-looking statements and other information of a general economic or industry nature, which projections, forward-looking statements and other information of a general economic or industry nature have been prepared by Borrower in good faith based upon assumptions believed by Borrower to be reasonable at the time) contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements contained in such certificates or statements not misleading. There is no fact known to Borrower which materially adversely affects, or which could in the future be reasonably expected to materially adversely affect, its ability to perform its obligations under this Agreement.

5.12 Solvency, Etc. Borrower is Solvent (as defined below) and, after the execution and delivery of the Loan Documents and the consummation of the transactions contemplated thereby, Borrower will be Solvent. "Solvent" means, with respect to any Person on any date, that on such date (a) the fair value of the property of such Person is greater than the fair value of the liabilities (including contingent liabilities) of such Person, (b) the present fair saleable value of the assets of such Person is not less than the amount that will be required to pay the probable liability of such Person on its debts as they become absolute and matured, (c) such Person does not intend to, and does not believe that it will, incur debts or liabilities beyond such Person's ability to pay as such debts and liabilities mature and (d) such Person is not engaged in business or a transaction, and is not about to engage in business or a transaction, for which such Person's property would constitute an unreasonably small capital.

5.13 Subsidiaries. Borrower has no Subsidiaries.

5.14 Capitalization. All issued and outstanding Equity Securities of Borrower are duly authorized and validly issued, fully paid and non-assessable, and such securities were issued in compliance with all applicable state and federal laws concerning the issuance of securities, except for such compliance with such laws that would not reasonably be expected to result in a Material Adverse Effect.

5.15 Catastrophic Events; Labor Disputes. None of Borrower, any Subsidiary or any of their respective Property is or has been affected by any fire, explosion, accident, strike, lockout or other labor dispute, drought, storm, hail, earthquake, embargo, act of God or other casualty that could reasonably be expected to have a Material Adverse Effect. There are no disputes presently subject to grievance procedure, arbitration or litigation under any of the collective bargaining agreements, employment contracts or employee welfare or incentive plans to which Borrower or any Subsidiary is a party, and there are no strikes, lockouts, work stoppages or slowdowns, or, to the knowledge of Borrower, jurisdictional disputes or organizing activity occurring or threatened which could reasonably be expected to have a Material Adverse Effect.

5.16 Certain Agreements of Officers, Employees and Consultants

(a) No Violation. To the knowledge of Borrower, no officer, employee or consultant of Borrower is, or is now expected to be, in violation of any term of any employment contract, proprietary information agreement, nondisclosure agreement, noncompetition agreement or any other material contract or agreement or any restrictive covenant relating to the right of any such officer, employee or consultant to be employed by Borrower because of the nature of the business conducted or to be conducted by Borrower or relating to the use of trade secrets or proprietary information of others, and to Borrower's knowledge, the continued employment of Borrower's officers, employees and consultants does not subject Borrower to any material liability for any claim or claims arising out of or in connection with any such contract, agreement, or covenant.

(b) No Present Intention to Terminate. To the knowledge of Borrower, no officer of Borrower, and no employee or consultant of Borrower whose termination, either individually or in the aggregate, could reasonably be expected to have a Material Adverse Effect, has any present intention of terminating his or her employment or consulting relationship with Borrower.

5.17 No Plan Assets. Neither Borrower nor any Subsidiary is an "employee benefit plan," as defined in Section 3(3) of ERISA, subject to Title I of ERISA, and none of the assets of Borrower or any Subsidiary constitutes or will constitute "plan assets" of one or more such plans within the meaning of 29 C.F.R. Section 2510.3-101. In addition, (a) neither Borrower nor any Subsidiary is a "governmental plan" within the meaning of Section 3(32) of ERISA and (b) transactions by or with Borrower or any Subsidiary are not subject to state statutes regulating investment of, and fiduciary obligations with respect to, governmental plans similar to the provisions of Section 406 of ERISA or Section 4975 of the Internal Revenue Code currently in effect, which prohibit or otherwise restrict the transactions contemplated by this Loan Agreement.

5.18 Sanctions, Etc. None of Borrower, any of its Subsidiaries or, to the knowledge of Borrower after due inquiry, any director, officer, employee, agent or Affiliate of Borrower or any of its Subsidiaries, is a Person that is, or is owned or controlled by Persons that are, (b) the subject or target of any Sanctions or (b) located, organized or resident in a country or territory that is, or whose government is, the subject of Sanctions. To the best of Borrower's knowledge, as of the date hereof and at all times throughout the term of this Agreement, including after giving effect to any transfers of interests permitted pursuant to the Loan Documents, none of the funds of Borrower, any Subsidiary or of their Affiliates have been (or will be) derived from any unlawful activity with the result that the investment in the respective party (whether directly or indirectly), is prohibited by applicable law or the Loans are in violation of applicable law.

5.19 Regulatory Compliance. Borrower is not a "bank holding company" or a direct or indirect subsidiary of a "bank holding company" as defined in the Bank Holding Company Act of 1956, as amended, and Regulation Y thereunder of the Board of Governors of the Federal Reserve System. Neither Borrower nor any Subsidiary is an "investment company" or a company controlled by an "investment company" under the Investment Company Act of 1940. Borrower is not engaged in the business of extending credit for the purpose of purchasing or carrying margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System) and no proceeds of any Loan will be used to purchase or carry margin stock or to extend credit to others for the purpose of purchasing or carrying any margin stock.

5.20 Payment of Taxes. All federal and other material tax returns, reports and statements (including any attachments thereto or amendments thereof) of Borrower and its Subsidiaries filed or required to be filed by any of them have been timely filed (or extensions have been obtained and such extensions have not expired) and all taxes shown on such tax returns or otherwise due and payable and all assessments, fees and other governmental charges upon Borrower, its Subsidiaries and their respective properties, assets, income, businesses and franchises which are due and payable have been paid when due and payable, except for the payment of any such taxes, assessments, fees and other governmental charges which are being diligently contested by Borrower in good faith by appropriate proceedings and for which adequate reserves have been made under GAAP. To the knowledge of Borrower, no tax return of Borrower or any Subsidiary is currently under an audit or examination, and Borrower has not received written notice of any proposed audit or examination, in each case, where a material amount of tax is at issue. Borrower is not an “S corporation” within the meaning of Section 1361(a)(1) of the Internal Revenue Code of 1986, as amended (the “Internal Revenue Code”).

5.21 Anti-Terrorism Laws. Borrower will not, directly or indirectly, use the proceeds of the Loans, or lend, contribute or otherwise make available such proceeds to any Subsidiary, joint venture partner or other Person, (i) to fund any activities or business of or with any Person, or in any country or territory, that, at the time of such funding, is, or whose government is, the subject of Sanctions, or (ii) in any other manner that would result in a violation of Sanctions by any Person (including any Person participating in the Loans, whether as lender, underwriter, advisor, investor or otherwise). Lender hereby notifies Borrower that pursuant to the requirements of Anti-Terrorism Laws, and Lender’s policies and practices, Lender is required to obtain, verify and record certain information and documentation that identifies Borrower and its principals, which information includes the name and address of Borrower and its principals and such other information that will allow Lender to identify such party in accordance with Anti-Terrorism Laws.

6. Affirmative Covenants. Borrower, until the full and complete payment of the Obligations, covenants and agrees that:

6.1 Good Standing. Borrower shall maintain, and cause each of its Subsidiaries to maintain, its corporate existence and its good standing in its jurisdiction of incorporation and maintain qualification in each jurisdiction in which the failure to so qualify could reasonably be expected to have a Material Adverse Effect. Borrower shall maintain, and cause each of its Subsidiaries to maintain, in force all licenses, approvals and agreements, the loss of which could reasonably be expected to have a Material Adverse Effect.

6.2 Government Compliance. Borrower shall comply, and cause each of its Subsidiaries to comply, with all statutes, laws, ordinances and government rules and regulations to which it is subject, noncompliance with which could reasonably be expected to have a Material Adverse Effect.

6.3 Financial Statements, Reports, Certificates. Borrower shall deliver to Lender: (a) at the time of filing of Borrower's Form 10-K with the U.S. Securities and Exchange Commission after the end of each fiscal year of Borrower, the financial statements of Borrower filed with such Form 10-K; and (ii) at the time of filing of Borrower's Form 10-Q with the U.S. Securities and Exchange Commission after the end of each of the first three fiscal quarters of Borrower, the Consolidated financial statements of Borrower filed with such Form 10-Q; and (c) as soon as available, but in any event within forty-five (45) days after the earlier of (i) the end of Borrower's fiscal year or (ii) the date of Borrower's board of directors' adoption, Borrower's operating budget and plan for the next fiscal year; and (d) such other financial information as Lender may reasonably request from time to time. In addition, Borrower shall deliver to Lender (A) promptly upon becoming available, copies of all statements, reports and notices sent or made available generally by Borrower to its security holders and (B) immediately upon receipt of notice thereof, a report of any material legal actions pending or threatened against Borrower or any Subsidiary or the commencement of any action, proceeding or governmental investigation involving Borrower or any Subsidiary is commenced that is reasonably expected to result in damages or costs to Borrower of One Hundred Thousand Dollars (\$100,000) or more.

6.4 Certificates of Compliance. Each time financial statements are furnished pursuant to Section 6.3 above, Borrower shall deliver to Lender an Officer's Certificate signed by Borrower's president, treasurer or chief financial officer (each, a "Responsible Officer") in the form of, and certifying to the matters set forth in Exhibit E hereto.

6.5 Notice of Defaults. As soon as possible, and in any event within five (5) days after the discovery of a Default or an Event of Default, Borrower shall provide Lender with an Officer's Certificate setting forth the facts relating to or giving rise to such Default or Event of Default and the action which Borrower proposes to take with respect thereto.

6.6 Taxes. Borrower shall make, and cause each Subsidiary to make, due and timely payment or deposit of all federal, state, and local taxes, assessments, or contributions required of it by law or imposed upon any Property belonging to it, and will execute and deliver to Collateral Agent and Lender, on demand, appropriate certificates attesting to the payment or deposit thereof; and Borrower will make, and cause each Subsidiary to make, timely payment or deposit of all tax payments and withholding taxes required of it by applicable laws, including those laws concerning F.I.C.A., F.U.T.A., state disability, and local, state, and federal income taxes, and will, upon request, furnish Collateral Agent and Lender with proof satisfactory to Lender indicating that Borrower and each Subsidiary has made such payments or deposits; *provided* that Borrower need not make any payment if the amount or validity of such payment is contested in good faith by appropriate proceedings which suspend the collection thereof (provided that such proceedings do not involve any substantial danger of the sale, forfeiture or loss of any material item of Collateral or Collateral which in the aggregate is material to Borrower and that Borrower has adequately bonded such amounts or reserves sufficient to discharge such amounts have been provided on the books of Borrower). In addition, Borrower shall not change, and shall not permit any Subsidiary to change, its respective jurisdiction of residence for taxation purposes.

6.7 Use; Maintenance. Borrower shall keep and maintain all items of equipment and other similar types of personal property that form any significant portion or portions of the Collateral in good operating condition and repair (ordinary wear and tear excepted) and shall make all necessary replacements thereof and renewals thereto so that the value and operating efficiency thereof shall at all times be maintained and preserved. Borrower shall not permit any such material item of Collateral to become a fixture to real estate or an accession to other personal property of another Person, without the prior written consent of Collateral Agent and Lender. Borrower shall not permit any such material item of Collateral to be operated or maintained in violation of any applicable law, statute, rule or regulation. With respect to items of leased equipment (to the extent Collateral Agent and Lender have any security interest in any residual Borrower's interest in such equipment under the lease), Borrower shall keep, maintain, repair, replace and operate such leased equipment in accordance in all material respects with the terms of the applicable lease.

6.8 Insurance. Borrower shall keep its business and the Collateral insured for risks and in amounts standard for companies in Borrower's industry and location, and as Collateral Agent or Lender may reasonably request. Insurance policies shall be in a form, with companies, and in amounts that are reasonably satisfactory to Collateral Agent and Lender. All property policies shall have a lender's loss payable endorsement showing Collateral Agent and Lender as an additional loss payee and all general liability policies shall show Collateral Agent and Lender as an additional insured and all policies shall provide that the insurer must give Collateral Agent at least thirty (30) days' notice before canceling its policy. At Collateral Agent's or Lender's request, Borrower shall deliver certified copies of policies and evidence of all premium payments. Proceeds payable under any property policy shall, at Collateral Agent's or Lender's option, be payable to Collateral Agent, for the benefit of Lender, or to Lender on account of the Obligations. Notwithstanding the foregoing, so long as no Event of Default has occurred and is continuing, Borrower shall have the option of applying the proceeds of any property policy, toward the replacement or repair of destroyed or damaged property; *provided* that (a) any such replaced or repaired property (i) shall be of equal or like value as the replaced or repaired Collateral and (ii) shall be deemed Collateral in which Collateral Agent and Lender have been granted a first priority security interest and (b) after the occurrence and during the continuation of an Event of Default all proceeds payable under such property policy shall, at the option of Collateral Agent or Lender, be payable to Collateral Agent, for the benefit of Lender, or to Lender on account of the Obligations. If Borrower fails to obtain insurance as required under Section 6.8 or to pay any amount or furnish any required proof of payment to third persons and Collateral Agent or Lender, Collateral Agent or Lender may make all or part of such payment or obtain such insurance policies required in Section 6.8, and take any action under the policies Collateral Agent or Lender deems prudent. On or prior to the first Funding Date and prior to each policy renewal, Borrower shall furnish to Collateral Agent certificates of insurance or other evidence reasonably satisfactory to Collateral Agent and Lender that insurance complying with all of the above requirements is in effect.

6.9 Further Assurances. At any time and from time to time Borrower shall execute and deliver such further instruments and take such further action as may reasonably be requested by Collateral Agent or Lender to make effective the purposes of this Agreement, including the continued perfection and priority of Collateral Agent's and Lender's security interest in the Collateral.

6.10 Subsidiaries. Borrower, upon Lender's or Collateral Agent's request, shall cause any Subsidiary to provide Lender and Collateral Agent with a guaranty of the Obligations and a security interest in such Subsidiary's assets to secure such guaranty.

6.11 Keeping of Books. Borrower shall keep proper books of record and account, in which full and correct entries shall be made of all financial transactions and the assets and business of Borrower and its Subsidiaries in accordance with GAAP.

7. Negative Covenants. Borrower, until the full and complete payment of the Obligations, covenants and agrees that Borrower shall not:

7.1 Chief Executive Office. Change its name, jurisdiction of incorporation, chief executive office, principal place of business or any of the items set forth in Section 1 of the Disclosure Schedule without thirty (30) days prior written notice to Collateral Agent and Lender.

7.2 Collateral Control. Subject to its rights under Sections 4.4 and 7.4, remove any items of Collateral (other than (i) clinical trial materials, (ii) laptops and similar equipment maintained by Borrower's employees, (iii) research materials maintained at contract research and storage facilities, and (iv) other Collateral with an aggregate value of not more than \$100,000) from Borrower's facility located at the address set forth on the cover page hereof or as set forth on the Disclosure Schedule.

7.3 Liens. Create, incur, allow or suffer, or permit any Subsidiary to create, incur, allow or suffer, any Lien on any of its property, or assign or convey any right to receive income, including the sale of any accounts except for Permitted Liens, or permit any Collateral not to be subject to the first priority security interest granted herein (except for Permitted Liens that are permitted by the terms of this Agreement or by operation of law to have priority to Collateral Agent's and Lender's Liens), or enter into any agreement, document, instrument or other arrangement (except with or in favor of Collateral Agent, for the benefit of Lender, or Lender) with any Person which directly or indirectly prohibits or has the effect of prohibiting Borrower or any Subsidiary from assigning, mortgaging, pledging, granting a security interest in or upon, or encumbering any of Borrower's or any Subsidiary's Intellectual Property, except (a) as otherwise permitted in Section 7.4 hereof and (b) as set forth in the definition of "Permitted Liens" herein.

7.4 Other Dispositions of Collateral. Convey, sell, lease or otherwise dispose of, or permit any Subsidiary to convey, sell, lease or otherwise dispose, of all or any part of the Collateral to any Person (collectively, a "Transfer"), except for: (a) Transfers of inventory in the ordinary course of business; (b) Transfers of worn-out or obsolete equipment made in the ordinary course of business; and (c) Transfers pursuant to Permitted Licenses; (d) sales of assets consented to by Lender; (e) Transfers in connection with transactions permitted by Sections 7.5, 7.6 and 7.8; (f) Transfers of cash or cash equivalents for uses not prohibited by the terms of this Agreement; (g) Liens permitted by Section 7.3; (i) Investments permitted by Section 7.11; (h) leases, subleases, licenses or sub-licenses of real or personal property granted by Borrower or any Subsidiary to others in the ordinary course of business not interfering in any material respect with the business of Borrower or such Subsidiary; and (i) Transfers not otherwise permitted pursuant to this Section; provided that (i) at the time of such Transfer, no Default or Event of Default shall exist or would result from such Transfer, (ii) such Transfer is made for fair market value and the consideration received shall be no less than 75% in cash, and (iii) the aggregate book value of all property disposed of in reliance on this clause (l) shall not exceed \$50,000 in any fiscal year of Borrower.

7.5 Distributions. (a) Pay any dividends or make any distributions, or permit any Subsidiary to pay any dividends or make any distributions, on their respective Equity Securities; (b) purchase, redeem, retire, defease or otherwise acquire, or permit any Subsidiary to purchase, redeem, retire, defease or otherwise acquire, for value any of their respective Equity Securities (other than repurchases pursuant to the terms of employee stock purchase plans, employee restricted stock agreements or similar arrangements in an aggregate amount not to exceed One Hundred Thousand Dollars (\$100,000) in any fiscal year); (c) return, or permit any Subsidiary to return, any capital to any holder of its Equity Securities as such; (d) make, or permit any Subsidiary to make, any distribution of assets, Equity Securities, obligations or securities to any holder of its Equity Securities as such; or (e) set apart any sum for any such purpose; *provided*, however, Borrower may pay dividends payable solely in Borrower's common stock.

7.6 Mergers or Acquisitions. Merge or consolidate, or permit any Subsidiary to merge or consolidate, with or into any other Person or acquire, or permit any Subsidiary to acquire, all or substantially all of the capital stock or assets of another Person; *provided* that (a) any Subsidiary may merge into another Subsidiary and (b) any Subsidiary may merge into Borrower so long as Borrower is the surviving entity.

7.7 Change in Business or Ownership. (a) Engage, or permit any Subsidiary to engage, in any business other than the businesses currently engaged in by Borrower or such Subsidiary, as applicable, or reasonably related thereto or (b) issue in a private placement Equity Securities to venture capital investors that results in one or more of such investors holding twenty-five percent (25%) or more of Borrower's ownership following such issuance unless Borrower identifies to Lender and Collateral Agent the venture capital investors prior to the execution of a definitive agreement and any such venture capital investors have cleared Lender's "know your customer" checks.

7.8 Transactions With Affiliates; Creation of Subsidiaries. (a) Enter, or permit any Subsidiary to enter, into any contractual obligation with any Affiliate or engage in any other transaction with any Affiliate except upon terms at least as favorable to Borrower or such Subsidiary, as applicable, as an arms-length transaction with Persons who are not Affiliates of Borrower or (b) create a Subsidiary without providing at least 10 Business Days advance notice thereof to Lender and, if requested by Lender, such Subsidiary guarantees the Obligations and grants a security interest in its assets to secure such guaranty, in each case on terms reasonably satisfactory to Collateral Agent and Lender.

7.9 Indebtedness Payments. (a) Prepay, redeem, purchase, defease or otherwise satisfy in any manner prior to the scheduled repayment thereof any Indebtedness for borrowed money (other than amounts due or permitted to be prepaid under this Agreement) or lease obligations, (b) amend, modify or otherwise change the terms of any Indebtedness for borrowed money or lease obligations so as to accelerate the scheduled repayment thereof or (c) repay any notes to officers, directors or shareholders.

7.10 Indebtedness. Create, incur, assume or permit, or permit any Subsidiary to create, incur or permit, to exist any Indebtedness except Permitted Indebtedness.

7.11 Investments. Make, or permit any Subsidiary to make, any Investment except for Permitted Investments.

7.12 Compliance. (a) Become, or permit any Subsidiary to become, an “investment company” or a company controlled by an “investment company” under the Investment Company Act of 1940, or undertake as one of its important activities, extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Loan for that purpose; (b) become, or permit any Subsidiary to become, subject to any other federal or state law or regulation which purports to restrict or regulate its ability to borrow money; or (c) (i) fail, or permit any Subsidiary to fail, to meet the minimum funding requirements of the Employment Retirement Income Security Act of 1974, and its regulations, as amended from time to time (“ERISA”), permit, or (ii) permit, or permit any Subsidiary to permit, a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; (d) fail, or permit any Subsidiary to fail, to comply with the Federal Fair Labor Standards Act or violate any other law or regulation, if the violation could reasonably be expected to have Material Adverse Effect.

7.13 Maintenance of Accounts. (a) Maintain any deposit account or securities account except accounts with respect to which Collateral Agent and Lender have obtained a perfected security interest in such accounts through one or more Account Control Agreements and deposit accounts established solely as payroll accounts, provided, however, that any such payroll account over which Collateral Agent and Lenders do not maintain an Account Control Agreement shall not contain deposits in an amount exceeding one hundred five percent (105%) of the amount necessary to fund the Borrower’s payroll obligations for one payroll cycle or (b) grant or allow any other Person (other than Collateral Agent or Lender) to perfect a security interest in, or enter into any agreements with any Persons (other than Collateral Agent or Lender) accomplishing perfection via control as to, any of its deposit accounts or securities accounts.

7.14 Negative Pledge Regarding Intellectual Property. Create, incur, assume or suffer to exist, or permit any Subsidiary to create, incur, assume or suffer to exist, any Lien of any kind upon any Intellectual Property or Transfer any Intellectual Property, whether now owned or hereafter acquired, other than non-exclusive licenses of Intellectual Property entered into in the ordinary course of business.

8. Events of Default. Any one or more of the following events shall constitute an “Event of Default” by Borrower under this Agreement:

8.1 Failure to Pay. If Borrower fails to pay when due and payable or when declared due and payable in accordance with the Loan Documents: (a) any Scheduled Payment on the relevant Payment Date or on the relevant Maturity Date; or (b) any other portion of the Obligations within five (5) days after receipt of written notice from Lender that such payment is due.

8.2 Certain Covenant Defaults. If Borrower fails to perform any obligation arising under Sections 6.5 or 6.8 or violates any of the covenants contained in Section 7 of this Agreement.

8.3 Other Covenant Defaults. If Borrower fails or neglects to perform, keep, or observe any other term, provision, condition, covenant, or agreement contained in this Agreement (other than as set forth in Sections 8.1, 8.2 or 8.4 through 8.14), in any of the other Loan Documents and Borrower has failed to cure such default within thirty (30) days of the occurrence of such default. During this thirty (30) day period, the failure to cure the default is not an Event of Default (but no Loan will be made during the cure period).

8.4 Material Adverse Change. If there occurs a material adverse change in Borrower's business, or if there is a material impairment of the prospect of repayment of any portion of the Obligations owing to Collateral Agent or Lender or a material impairment of the value or priority of Collateral Agent's and Lender's security interest in the Collateral.

8.5 Intentionally Omitted.

8.6 Seizure of Assets, Etc. (a) If any material portion of Borrower's or any Subsidiary's assets (i) is attached, seized, subjected to a writ or distress warrant, or is levied upon or (ii) comes into the possession of any trustee, receiver or Person acting in a similar capacity and such attachment, seizure, writ or distress warrant or levy has not been removed, discharged or rescinded within ten (10) days, (b) if Borrower or any Subsidiary is enjoined, restrained or in any way prevented by court order from continuing to conduct all or any material part of its business affairs, (c) if a judgment or other claim becomes a lien or encumbrance upon any material portion of Borrower's or any Subsidiary's assets or (d) if a notice of lien, levy, or assessment is filed of record with respect to any of Borrower's or any Subsidiary's assets by the United States Government, or any department agency or instrumentality thereof, or by any state, county, municipal, or governmental agency, and the same is not paid within ten (10) days after Borrower receives notice thereof; *provided* that none of the foregoing shall constitute an Event of Default where such action or event is stayed or an adequate bond has been posted pending a good faith contest by Borrower.

8.7 Service of Process. (a) The service of process upon Collateral Agent or Lender seeking to attach by a trustee or other process any funds of Borrower on deposit or otherwise held by Collateral Agent or Lender in excess of One Hundred Thousand Dollars (\$100,000), (b) the delivery upon Collateral Agent or Lender of a notice of foreclosure by any Person seeking to attach or foreclose on any funds of Borrower on deposit or otherwise held by Collateral Agent or Lender in excess of One Hundred Thousand Dollars (\$100,000) or (c) the delivery of a notice of foreclosure or exclusive control to any entity holding or maintaining Borrower's deposit accounts or accounts holding securities by any Person (other than Collateral Agent or Lender) seeking to foreclose or attach any such accounts or securities.

8.8 Default on Indebtedness. One or more defaults shall exist under any agreement with any third party or parties which consists of the failure to pay any Indebtedness of Borrower or any Subsidiary at maturity or which results in a right by such third party or parties, whether or not exercised, to accelerate the maturity of Indebtedness in an aggregate amount in excess of One Hundred Thousand Dollars (\$100,000) or a default shall exist under any financing agreement with a Lender or any Lender's Affiliates.

8.9 Judgments. If a judgment or judgments for the payment of money in an amount, individually or in the aggregate, of at least One Hundred Thousand Dollars (\$100,000) shall be rendered against Borrower or any Subsidiary and shall remain unsatisfied and unstayed for a period of ten (10) days or more except for those that are fully covered by a reputable and financially sound insurer.

8.10 Misrepresentations. If any material misrepresentation or material misstatement exists now or hereafter in any warranty, representation, statement, certification, or report made to Collateral Agent or Lender by Borrower or any officer, employee, agent, or director of Borrower.

8.11 Breach of Warrant. If Borrower shall breach any material term of any Warrant.

8.12 Unenforceable Loan Document. If any Loan Document shall in any material respect cease to be, or Borrower shall assert that any Loan Document is not, a legal, valid and binding obligation of Borrower enforceable in accordance with its terms.

8.13 Involuntary Insolvency Proceeding. (a) If a proceeding shall have been instituted in a court having jurisdiction in the premises (i) seeking a decree or order for relief in respect of Borrower or any Subsidiary in an involuntary case under any applicable bankruptcy, insolvency or other similar law now or hereafter in effect, (ii) for the appointment of a receiver, liquidator, administrator, assignee, custodian, trustee (or similar official) of Borrower or any Subsidiary or for any substantial part of its Property or (iii) for the winding-up or liquidation of its affairs, and such proceeding shall remain undismissed or unstayed and in effect for a period of thirty (30) consecutive days or (b) such court shall enter a decree or order granting the relief sought in any such proceeding.

8.14 Voluntary Insolvency Proceeding. If Borrower or any Subsidiary shall (a) commence a voluntary case under any applicable bankruptcy, insolvency or other similar law now or hereafter in effect, (b) consent to the entry of an order for relief in an involuntary case under any such law, (c) consent to the appointment of or taking possession by a receiver, liquidator, assignee, trustee, custodian (or other similar official) of Borrower or any Subsidiary or for any substantial part of its Property, (d) shall make a general assignment for the benefit of creditors, (e) shall fail generally to pay its debts as they become due or (f) take any corporate action in furtherance of any of the foregoing.

9. Lender's Rights and Remedies.

9.1 Rights and Remedies. Upon the occurrence of any Default or Event of Default, Lender shall not have any further obligation to advance money or extend credit to or for the benefit of Borrower. In addition, upon the occurrence of an Event of Default, Collateral Agent and Lender shall have the rights, options, duties and remedies of a secured party as permitted by law and, in addition to and without limitation of the foregoing, Collateral Agent, on behalf of Lender, or Lender (acting alone) may, at its election, without notice of election and without demand, do any one or more of the following, all of which are authorized by Borrower:

(a) Acceleration of Obligations. Declare all Obligations, whether evidenced by this Agreement, by any of the other Loan Documents, or otherwise, including (i) any accrued and unpaid interest, (ii) the amounts which would have otherwise come due under Section 2.3(b)(ii) if the Loans had been voluntarily prepaid, (iii) the unpaid principal balance of the Loans and (iv) all other sums, if any, that shall have become due and payable hereunder, immediately due and payable (*provided* that upon the occurrence of an Event of Default described in Section 8.13 or 8.14 all Obligations shall become immediately due and payable without any action by Collateral Agent or Lender);

(b) Protection of Collateral. Make such payments and do such acts as Collateral Agent or Lender considers necessary or reasonable to protect Collateral Agent's and Lender's security interest in the Collateral. Borrower agrees to assemble the Collateral if Collateral Agent or Lender so requires and to make the Collateral available to Collateral Agent or Lender as Collateral Agent may designate. Borrower authorizes Collateral Agent, Lender and their designees and agents to enter the premises where the Collateral is located, to take and maintain possession of the Collateral, or any part of it, and to pay, purchase, contest, or compromise any Lien which in Collateral Agent's or Lender's determination appears or is claimed to be prior or superior to its security interest and to pay all expenses incurred in connection therewith. With respect to any of Borrower's owned premises, Borrower hereby grants Collateral Agent and Lender a license to enter into possession of such premises and to occupy the same, without charge, for up to one hundred twenty (120) days in order to exercise any of Collateral Agent's and Lender's rights or remedies provided herein, at law, in equity, or otherwise;

(c) Preparation of Collateral for Sale. Ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell (in the manner provided for herein) the Collateral. Collateral Agent, Lender and their agents and any purchasers at or after foreclosure are hereby granted a non-exclusive, irrevocable, perpetual, fully paid, royalty-free license or other right, solely pursuant to the provisions of this Section 9.1, to use, without charge, Borrower's Intellectual Property, including labels, patents, copyrights, rights of use of any name, trade secrets, trade names, trademarks, service marks, and advertising matter, or any Property of a similar nature, now or at any time hereafter owned or acquired by Borrower or in which Borrower now or at any time hereafter has any rights; *provided* that such license shall only be exercisable in connection with the disposition of Collateral upon Collateral Agent's or Lender's exercise of its remedies hereunder and that any exercise of remedies under this Section 9.1(c) shall be subject to any rights of third parties in or to such Intellectual Property;

(d) Sale of Collateral. Sell the Collateral at either a public or private sale, or both, by way of one or more contracts or transactions, for cash or on terms, in such manner and at such places (including Borrower's premises) as Collateral Agent or Lender determines are commercially reasonable; and

(e) Purchase of Collateral. Credit bid and purchase all or any portion of the Collateral at any public sale.

Any deficiency that exists after disposition of the Collateral as provided above will be paid immediately by Borrower.

9.2 Set Off Right. Collateral Agent and Lender may set off and apply to the Obligations any and all Indebtedness at any time owing to or for the credit or the account of Borrower or any other assets of Borrower in Collateral Agent's or Lender's possession or control.

9.3 Effect of Sale. Upon the occurrence and continuation of an Event of Default, to the extent permitted by law, Borrower covenants that it will not at any time insist upon or plead, or in any manner whatsoever claim or take any benefit or advantage of, any stay or extension law now or at any time hereafter in force, nor claim, take nor insist upon any benefit or advantage of or from any law now or hereafter in force providing for the valuation or appraisal of the Collateral or any part thereof prior to any sale or sales thereof to be made pursuant to any provision herein contained, or to the decree, judgment or order of any court of competent jurisdiction; nor, after such sale or sales, claim or exercise any right under any statute now or hereafter made or enacted by any state or otherwise to redeem the property so sold or any part thereof, and, to the full extent legally permitted, except as to rights expressly provided herein, hereby expressly waives for itself and on behalf of each and every Person, except decree or judgment creditors of Borrower, acquiring any interest in or title to the Collateral or any part thereof subsequent to the date of this Agreement, all benefit and advantage of any such law or laws, and covenants that it will not invoke or utilize any such law or laws or otherwise hinder, delay or impede the execution of any power herein granted and delegated to Collateral Agent or Lender, but will suffer and permit the execution of every such power as though no such power, law or laws had been made or enacted. Any sale, whether under any power of sale hereby given or by virtue of judicial proceedings, shall operate to divest all right, title, interest, claim and demand whatsoever, either at law or in equity, of Borrower in and to the Property sold, and shall be a perpetual bar, both at law and in equity, against Borrower, its successors and assigns, and against any and all Persons claiming the Property sold or any part thereof under, by or through Borrower, its successors or assigns.

9.4 Power of Attorney in Respect of the Collateral. Borrower does hereby irrevocably appoint Collateral Agent, on behalf of Lender (which appointment is coupled with an interest) the true and lawful attorney in fact of Borrower, with full power of substitution and in its name to file any notices of security interests, financing statements and continuations and amendments thereof pursuant to the Code or federal law, as may be necessary to perfect or to continue the perfection of Collateral Agent's and Lender's security interests in the Collateral. Borrower does hereby irrevocably appoint Collateral Agent, on behalf of Lender (which appointment is coupled with an interest) on the occurrence and continuation of an Event of Default, the true and lawful attorney in fact of Borrower, with full power of substitution and in its name: (a) to ask, demand, collect, receive, receipt for, sue for, compound and give acquittance for any and all rents, issues, profits, avails, distributions, income, payment draws and other sums in which a security interest is granted under Section 4 with full power to settle, adjust or compromise any claim thereunder as fully as if Collateral Agent or Lender were Borrower itself; (b) to receive payment of and to endorse the name of Borrower to any items of Collateral (including checks, drafts and other orders for the payment of money) that come into Collateral Agent's or Lender's possession or under Collateral Agent's or Lender's control; (c) to make all demands, consents and waivers, or take any other action with respect to, the Collateral; (d) in Collateral Agent's or Lender's discretion to file any claim or take any other action or proceedings, either in its own name or in the name of Borrower or otherwise, which Collateral Agent or Lender may reasonably deem necessary or appropriate to protect and preserve the right, title and interest of Collateral Agent and Lender in and to the Collateral; (e) endorse Borrower's name on any checks or other forms of payment or security; (f) sign Borrower's name on any invoice or bill of lading for any account or drafts against account debtors; (g) make, settle, and adjust all claims under Borrower's insurance policies; (h) settle and adjust disputes and claims about the accounts directly with account debtors, for amounts and on terms Collateral Agent or Lender determines reasonable; (i) transfer the Collateral into the name of Collateral Agent, Lender or a third party as the Code permits; and (j) to the extent permitted by applicable law, to otherwise act with respect thereto as though Collateral Agent or Lender were the outright owner of the Collateral.

9.5 Lender's Expenses. If Borrower fails to pay any amounts or furnish any required proof of payment due to third persons or entities, as required under the terms of this Agreement, then Collateral Agent or Lender may do any or all of the following: (a) make payment of the same or any part thereof; or (b) obtain and maintain insurance policies of the type discussed in Section 6.8 of this Agreement, and take any action with respect to such policies as Collateral Agent or Lender deems prudent. Any amounts paid or deposited by Collateral Agent or Lender shall constitute Lender's Expenses, shall be immediately due and payable, shall bear interest at the Default Rate and shall be secured by the Collateral. Any payments made by Collateral Agent or Lender shall not constitute an agreement by Collateral Agent or Lender to make similar payments in the future or a waiver by Collateral Agent or Lender of any Event of Default under this Agreement. Borrower shall pay all reasonable fees and expenses, including Lender's Expenses, incurred by Collateral Agent or Lender in the enforcement or attempt to enforce any of the Obligations hereunder not performed when due.

9.6 Remedies Cumulative; Independent Nature of Lender's Rights. Collateral Agent's and Lender's rights and remedies under this Agreement, the Loan Documents, and all other agreements shall be cumulative. Collateral Agent and Lender shall have all other rights and remedies not inconsistent herewith as provided under the Code, by law, or in equity. No failure on the part of Collateral Agent or Lender to exercise, and no delay in exercising, any right or remedy hereunder shall operate as a waiver thereof; nor shall any single or partial exercise of any such right or remedy preclude any other or further exercise thereof or the exercise of any other right. The Obligations of Borrower to Lender may be enforced by Lender or Collateral Agent against Borrower in accordance with the terms of this Agreement and the other Loan Documents and, to the fullest extent permitted by applicable law, it shall not be necessary for Collateral Agent or Lender, as applicable, to be joined as an additional party in any proceeding to enforce such Obligations.

9.7 Application of Collateral Proceeds. The proceeds and/or avails of the Collateral, or any part thereof, and the proceeds and the avails of any remedy hereunder (as well as any other amounts of any kind held by Collateral Agent or Lender, at the time of or received by Collateral Agent or Lender after the occurrence of an Event of Default hereunder) shall be paid to and applied as follows:

(a) First, to the payment of out-of-pocket costs and expenses, including all amounts expended to preserve the value of the Collateral, of foreclosure or suit, if any, and of such sale and the exercise of any other rights or remedies, and of all proper fees, expenses, liability and advances, including reasonable legal expenses and attorneys' fees, incurred or made hereunder by Collateral Agent or Lender, including Lender's Expenses;

(b) Second, to the payment to Lender of the amount then owing or unpaid on the Loans for any accrued and unpaid interest, the amounts which would have otherwise come due under Section 2.3(b)(ii), if the Loans had been voluntarily prepaid, the principal balance of the Loans, and all other Obligations with respect to the Loans (*provided*, however, if such proceeds shall be insufficient to pay in full the whole amount so due, owing or unpaid upon the Loans, then *first*, to the unpaid interest thereon ratably, *second*, to the amounts which would have otherwise come due under Section 2.3(b)(ii) ratably, if the Loans had been voluntarily prepaid, *third*, to the principal balance of the Loans ratably, and *fourth*, to the ratable payment of other amounts then payable to Lender under any of the Loan Documents); and

(c) Third, to the payment of the surplus, if any, to Borrower, its successors and assigns or to the Person lawfully entitled to receive the same.

9.8 Reinstatement of Rights. If Collateral Agent or Lender shall have proceeded to enforce any right under this Agreement or any other Loan Document by foreclosure, sale, entry or otherwise, and such proceedings shall have been discontinued or abandoned for any reason or shall have been determined adversely, then and in every such case (unless otherwise ordered by a court of competent jurisdiction), Collateral Agent and Lender shall be restored to their former position and rights hereunder with respect to the Property subject to the security interest created under this Agreement.

10. Waivers; Indemnification.

10.1 Demand; Protest. Borrower waives demand, protest, notice of protest, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees at any time held by Collateral Agent or Lender on which Borrower may in any way be liable.

10.2 Lender's Liability for Collateral. So long as Collateral Agent and Lender complies with its obligations, if any, under the Code, neither Collateral Agent nor Lender shall in any way or manner be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage thereto occurring or arising in any manner or fashion from any cause other than Collateral Agent's or Lender's gross negligence or willful misconduct; (c) any diminution in the value thereof; or (d) any act or default of any carrier, warehouseman, bailee, forwarding agency, or other Person whomsoever. All risk of loss, damage or destruction of the Collateral shall be borne by Borrower.

10.3 Indemnification and Waiver. Whether or not the transactions contemplated hereby shall be consummated:

(a) General Indemnity. Borrower agrees upon demand to pay or reimburse Collateral Agent and Lender for all liabilities, obligations and out-of-pocket expenses, including Lender's Expenses and reasonable fees and expenses of counsel for Collateral Agent and Lender from time to time arising in connection with the enforcement or collection of sums due under the Loan Documents, and in connection with any amendment or modification of the Loan Documents or any "work-out" in connection with the Loan Documents. Borrower shall indemnify, reimburse and hold Collateral Agent, Lender, and each of their respective successors, assigns, agents, attorneys, officers, directors, equity holders, servants, agents and employees (each an "Indemnified Person") harmless from and against all liabilities, losses, damages, actions, suits, demands, claims of any kind and nature (including claims relating to environmental discharge, cleanup or compliance), all costs and expenses whatsoever to the extent they may be incurred or suffered by such Indemnified Person in connection therewith (including reasonable attorneys' fees and expenses), fines, penalties (and other charges of any applicable Governmental Authority), licensing fees relating to any item of Collateral, damage to or loss of use of property (including consequential or special damages to third parties or damages to Borrower's property), or bodily injury to or death of any person (including any agent or employee of Borrower) (each, a "Claim"), directly or indirectly relating to or arising out of the use of the proceeds of the Loans or otherwise, the falsity of any representation or warranty of Borrower or Borrower's failure to comply with the terms of this Agreement or any other Loan Document. The foregoing indemnity shall cover, without limitation, (i) any Claim in connection with a design or other defect (latent or patent) in any item of equipment or product included in the Collateral, (ii) any Claim for infringement of any patent, copyright, trademark or other intellectual property right, (iii) any Claim resulting from the presence on or under or the escape, seepage, leakage, spillage, discharge, emission or release of any Hazardous Materials on the premises owned, occupied or leased by Borrower, including any Claims asserted or arising under any Environmental Law, (iv) any Claim for negligence or strict or absolute liability in tort or (v) any Claim asserted as to or arising under any Account Control Agreement or any Landlord Agreement; *provided*, however, Borrower shall not indemnify any Indemnified Person for any liability incurred by such Indemnified Person as a direct and sole result of such Indemnified Person's gross negligence or willful misconduct. Such indemnities shall continue in full force and effect, notwithstanding the expiration or termination of this Agreement. Upon Collateral Agent's or Lender's written demand, Borrower shall assume and diligently conduct, at its sole cost and expense, the entire defense of Collateral Agent and Lender, each of its members, partners, and each of their respective, agents, employees, directors, officers, equity holders, successors and assigns against any indemnified Claim described in this Section 10.3(a). Borrower shall not settle or compromise any Claim against or involving Collateral Agent or Lender without first obtaining Collateral Agent's or Lender's written consent thereto, which consent shall not be unreasonably withheld.

(b) Waiver. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT OR ANYWHERE ELSE, BORROWER AGREES THAT IT SHALL NOT SEEK FROM COLLATERAL AGENT OR LENDER UNDER ANY THEORY OF LIABILITY (INCLUDING ANY THEORY IN TORTS), ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES.

(c) Survival; Defense. The obligations in this Section 10.3 shall survive payment of all other Obligations pursuant to Section 12.8. At the election of any Indemnified Person, Borrower shall defend such Indemnified Person using legal counsel satisfactory to such Indemnified Person in such Person's reasonable discretion, at the sole cost and expense of Borrower. All amounts owing under this Section 10.3 shall be paid within thirty (30) days after written demand.

11. Notices. Unless otherwise provided in this Agreement, all notices or demands by any party relating to this Agreement or any other agreement entered into in connection herewith shall be in writing and (except for financial statements and other informational documents which may be sent by first-class mail, postage prepaid) shall be personally delivered or sent by certified mail, postage prepaid, return receipt requested, by prepaid nationally recognized overnight courier, or by prepaid facsimile to Borrower or to Lender, as the case may be, at their respective addresses set forth below:

If to Borrower: Titan Pharmaceuticals, Inc.
400 Oyster Point Blvd., Suite 505
South San Francisco, CA 94080
Attention: Chief Executive Officer
Fax: (650) 244-4956
Ph: (650) 244-4990

If to Horizon: Horizon Technology Finance Corporation
312 Farmington Avenue
Farmington, CT 06032
Attention: Legal Department
Fax: (860) 676-8655
Ph: (860) 676-8654

The parties hereto may change the address at which they are to receive notices hereunder, by notice in writing in the foregoing manner given to the other.

12. General Provisions.

12.1 Successors and Assigns. This Agreement and the Loan Documents shall bind and inure to the benefit of the respective successors and permitted assigns of each of the parties; *provided*, however, neither this Agreement nor any rights hereunder may be assigned by Borrower without Lender's prior written consent, which consent may be granted or withheld in Lender's sole discretion. Lender shall have the right without the consent of or notice to Borrower to sell, transfer, assign, negotiate, or grant participations in all or any part of, or any interest in Lender's rights and benefits hereunder. Collateral Agent and Lender may disclose the Loan Documents and any other financial or other information relating to Borrower to any potential participant or assignee of any of the Loans; *provided* that such participant or assignee agrees for the benefit of Borrower to protect the confidentiality of such documents and information using the same measures that it uses to protect its own confidential information.

12.2 Time of Essence. Time is of the essence for the performance of all obligations set forth in this Agreement.

12.3 Severability of Provisions. Each provision of this Agreement shall be severable from every other provision of this Agreement for the purpose of determining the legal enforceability of any specific provision.

12.4 Entire Agreement; Construction; Amendments and Waivers.

(a) Entire Agreement. This Agreement and each of the other Loan Documents, taken together, constitute and contain the entire agreement among Borrower, Collateral Agent and Lender and supersede any and all prior agreements, negotiations, correspondence, understandings and communications between the parties, whether written or oral, respecting the subject matter hereof. Borrower acknowledges that it is not relying on any representation or agreement made by Collateral Agent, Lender or any employee, attorney or agent thereof, other than the specific agreements set forth in this Agreement and the Loan Documents.

(b) Construction. This Agreement is the result of negotiations between and has been reviewed by each of Borrower, Collateral Agent and Lender as of the date hereof and their respective counsel; accordingly, this Agreement shall be deemed to be the product of the parties hereto, and no ambiguity shall be construed in favor of or against Borrower, Collateral Agent or Lender. Borrower, Collateral Agent and Lender agree that they intend the literal words of this Agreement and the other Loan Documents and that no parol evidence shall be necessary or appropriate to establish Borrower's, Collateral Agent's or Lender's actual intentions.

(c) Amendments and Waivers. Any and all discharges or waivers of, or consents to any departures from any provision of this Agreement or of any of the other Loan Documents shall not be effective without the written consent of Lender; *provided* that no such discharge, waiver or consent affecting the rights or duties of the Collateral Agent under this Agreement or any other Loan Document shall be effective without the written consent of the Collateral Agent. Any and all amendments and modifications of this Agreement or of any of the other Loan Documents shall not be effective without the written consent of Lender and Borrower; *provided* that no such amendment or modification affecting the rights or duties of the Collateral Agent under this Agreement or any other Loan Document shall be effective without the written consent of the Collateral Agent. Any waiver or consent with respect to any provision of the Loan Documents shall be effective only in the specific instance and for the specific purpose for which it was given. No notice to or demand on Borrower in any case shall entitle Borrower to any other or further notice or demand in similar or other circumstances. Any amendment, modification, waiver or consent affected in accordance with this Section 12.4 shall be binding upon Collateral Agent, Lender and on Borrower.

12.5 Reliance by Lender. All covenants, agreements, representations and warranties made herein by Borrower shall be deemed to be material to and to have been relied upon by Collateral Agent and Lender, notwithstanding any investigation by Collateral Agent or Lender.

12.6 No Set-Offs by Borrower. All sums payable by Borrower pursuant to this Agreement or any of the other Loan Documents shall be payable without notice or demand and shall be payable in United States Dollars without set-off or reduction of any manner whatsoever.

12.7 Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts (including signatures delivered by facsimile or other electronic means), each of which, when executed and delivered, shall be deemed to be an original, and all of which, when taken together, shall constitute but one and the same Agreement.

12.8 Survival. All covenants, representations and warranties made in this Agreement shall continue in full force and effect so long as any Obligations or commitment to fund remain outstanding. The obligations of Borrower to indemnify Collateral Agent and Lender with respect to the expenses, damages, losses, costs and liabilities described in Section 10.3 shall survive until all applicable statute of limitations periods with respect to actions that may be brought against Collateral Agent or Lender have run.

13. Relationship of Parties. Borrower and Lender acknowledge, understand and agree that the relationship between Borrower, on the one hand, and Lender, on the other, is, and at all times shall remain solely that of a borrower and lender. Lender shall not, under any circumstances, be construed to be a partner or a joint venturer of Borrower or any of its Affiliates; nor shall Lender, under any circumstances, be deemed to be in a relationship of confidence or trust or a fiduciary relationship with Borrower or any of its Affiliates, or to owe any fiduciary duty or any other duty to Borrower or any of its Affiliates. Neither Collateral Agent nor Lender undertakes or assumes any responsibility or duty to Borrower or any of its Affiliates to select, review, inspect, supervise, pass judgment upon or otherwise inform Borrower or any of its Affiliates of any matter in connection with its or their Property, any Collateral held by Collateral Agent or Lender or the operations of Borrower or any of its Affiliates. Borrower and each of its Affiliates shall rely entirely on their own judgment with respect to such matters, and any review, inspection, supervision, exercise of judgment or supply of information undertaken or assumed by Collateral Agent or Lender in connection with such matters is solely for the protection of Collateral Agent and Lender and neither Borrower nor any Affiliate is entitled to rely thereon.

14. Confidentiality. All information (other than periodic reports filed by Borrower with the U.S. Securities and Exchange Commission and information otherwise publicly disclosed by Borrower) disclosed by Borrower or its representatives to Collateral Agent or Lender their respective representatives, whether furnished before or after the date hereof and regardless of the manner in which such information is furnished (including disclosures through inspection pursuant to this Agreement and the other Loan Documents) shall be considered confidential if it is marked confidential or designated, in writing, as confidential, or if either Lender knows that such information is material non-public information, including, without limitation, financial information and information regarding Borrower's existing and prospective relationships and transactions with third parties (such information, collectively, the "Confidential Information"). Collateral Agent and Lender agree to use the same degree of care to safeguard and prevent disclosure of such Confidential Information as Collateral Agent and Lender use with their own confidential information, but in any event no less than a reasonable degree of care. Neither Collateral Agent nor Lender shall disclose such Confidential Information to any third party (other than (a) to another party hereto, (b) to Collateral Agent's or Lender's members, partners, attorneys, governmental regulators (including any self-regulatory authority) or auditors, (c) to Collateral Agent's or Lender's subsidiaries and affiliates, (d) on a confidential basis, to any rating agency, (e) to prospective transferees and purchasers of the Loans or any actual or prospective party (or its Affiliates) to any swap, derivative or other transaction under which payments are to be made by reference to the Obligations, Borrower, any Loan Document or any payment thereunder, all subject to the same confidentiality obligation set forth herein or (f) as required by law, regulation, subpoena or other order to be disclosed) and shall use such information only for purposes of evaluation of its investment in Borrower and the exercise of Collateral Agent's or Lender's rights and the enforcement of its remedies under this Agreement and the other Loan Documents. The obligations of confidentiality shall not apply to any information that (i) was known to the public prior to disclosure by Borrower or its representatives under this Agreement, (ii) becomes known to the public through no fault of Collateral Agent or Lender, (iii) is disclosed to Collateral Agent or Lender on a non-confidential basis by a third party or (iv) is independently developed by Collateral Agent or Lender. Notwithstanding the foregoing, Collateral Agent's and Lender's agreement of confidentiality shall not apply if Collateral Agent or Lender has acquired indefeasible title to any Collateral or in connection with any enforcement or exercise of Collateral Agent's or Lender's rights and remedies under this Agreement following an Event of Default, including the enforcement of Collateral Agent's and Lender's security interest in the Collateral.

15. CHOICE OF LAW AND VENUE; JURY TRIAL WAIVER. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF CONNECTICUT. EACH OF BORROWER, COLLATERAL AGENT AND LENDER HEREBY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS LOCATED IN THE STATE OF CONNECTICUT. BORROWER, COLLATERAL AGENT AND LENDER HEREBY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF ANY OF THE LOAN DOCUMENTS OR ANY OF THE TRANSACTIONS CONTEMPLATED THEREIN, INCLUDING CONTRACT CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW OR STATUTORY CLAIMS.

[Remainder of page intentionally left blank.]

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

BORROWER:
TITAN PHARMACEUTICALS, INC.

By: /s/ Sunil Bhonsle

Name: Sunil Bhonsle

Title: Chief Executive Officer and President

LENDER:
HORIZON TECHNOLOGY FINANCE CORPORATION

By: /s/ Robert D. Pomeroy

Name: Robert D. Pomeroy, Jr.

Title: Chief Executive Officer

[SIGNATURE PAGE TO VENTURE LOAN AND SECURITY AGREEMENT]

LIST OF EXHIBITS AND SCHEDULES

Exhibit A	Disclosure Schedule
Exhibit B	Funding Certificate
Exhibit C	Form of Note
Exhibit D	Form of Legal Opinion
Exhibit E	Form of Officer's Certificate

EXHIBIT A

DISCLOSURE SCHEDULE

(Provided separately and will be inserted upon completion.)

EXHIBIT B

FUNDING CERTIFICATE

The undersigned, being the duly elected and acting _____ of TITAN PHARMACEUTICALS, INC., a Delaware corporation (“Borrower”), does hereby certify to HORIZON TECHNOLOGY FINANCE CORPORATION (“Horizon” or “Lender”) in connection with that certain Venture Loan and Security Agreement dated as of the date hereof by and among Borrower, Lender and Horizon as Collateral Agent (the “Loan Agreement”; with other capitalized terms used below having the meanings ascribed thereto in the Loan Agreement) that:

1. The representations and warranties made by Borrower in Section 5 of the Loan Agreement and in the other Loan Documents are true and correct as of the date hereof.
2. No event or condition has occurred that would constitute a Default or an Event of Default under the Loan Agreement or any other Loan Document.
3. Borrower is in compliance with the covenants and requirements contained in Sections 4, 6 and 7 of the Loan Agreement.
4. All conditions referred to in Section 3 of the Loan Agreement to the making of the Loan to be made on or about the date hereof have been satisfied.
5. [LOAN C ONLY: Borrower, during the period commencing as of January 1, 2017 and continuing through December 31, 2017, has achieved revenue (as determined in accordance with GAAP) resulting from royalty payments of [_____].]
6. [LOAN C ONLY: Borrower, on [_____] has executed that certain [PARTNERSHIP AGREEMENT] with [_____] from the marketing and sale of Probuphine in Europe.]
7. [LOAN C ONLY: During the ten (10) day period immediately preceding the date of this Funding Certificate, Borrower’s market cap has ranged from a low of [_____] to a high of [_____].]
8. No material adverse change in the general affairs, management, results of operations, condition (financial or otherwise) or prospects of Borrower, whether or not arising from transactions in the ordinary course of business, has occurred.
9. The proceeds for Loan A and Loan B shall be disbursed as follows:

Disbursement from Horizon:	
Loan Amount	\$
Less:	
Legal Fees	\$
Balance of Commitment Fee	\$
Net Proceeds due from Horizon:	\$

10. The aggregate net proceeds of Loan A and Loan B in the amount of \$_____ shall be transferred by Horizon to Borrower's account as follows:

Account Name:
Bank Name:
Bank Address:
Attention:
Telephone:
Account Number:
ABA Number:

Dated: July __, 2017

BORROWER:

TITAN PHARMACEUTICALS, INC.

By: _____

Name: _____

Title: _____

(Signature page to Funding Certificate)

EXHIBIT C

SECURED PROMISSORY NOTE

(Loan A/B/C)

\$ _____

Dated: [_____, 20__]

FOR VALUE RECEIVED, the undersigned, TITAN PHARMACEUTICALS, INC., a Delaware corporation (“Borrower”), HEREBY PROMISES TO PAY to HORIZON TECHNOLOGY FINANCE CORPORATION, a Delaware corporation (“Lender”) the principal amount of _____ Dollars (\$ _____) or such lesser amount as shall equal the outstanding principal balance of Loan [] (the “Loan”) made to Borrower by Lender pursuant to the Loan Agreement (as defined below), and to pay all other amounts due with respect to the Loan on the dates and in the amounts set forth in the Loan Agreement. Capitalized terms used but not defined herein shall have the meaning ascribed thereto in the Loan Agreement.

Interest on the principal amount of this Note from the date of this Note shall accrue at the Loan Rate or, if applicable, the Default Rate, each as established in accordance with the Loan Agreement (as defined below). Interest shall be computed on the basis of a 360-day year for the actual number of days elapsed. If the Funding Date is not the first day of the month, interim interest accruing from the Funding Date through the last day of that month shall be paid on the first calendar day of the next calendar month. Commencing [], 201[], through and including December 1, 2018, on the first day of each month (each an “Interest Payment Date”) Borrower shall make payments of accrued interest only on the outstanding principal amount of the Loan. Commencing on January 1, 2019, and continuing on the first day of each month thereafter (each a “Principal and Interest Payment Date” and, collectively with each Interest Payment Date, each a “Payment Date”), Borrower shall make to Lender thirty (30) equal payments of principal in the amount of [_____] plus accrued interest on the then outstanding principal amount due hereunder. On the earliest to occur of (i) June 1, 2021, (ii) payment in full of the principal balance of the Loan or (iii) an Event of Default and demand by Lender of payment in full of the Loan, Borrower shall make a payment of [FOR LOANS A AND B—One Hundred Seventy-Five Thousand and 00/100 Dollars (\$175,000) to Lender] [FOR LOAN C—One Hundred Fifty Thousand and 00/100 Dollars (\$150,000) to Lender] (the “Final Payment”). If not sooner paid, all outstanding amounts hereunder and under the Loan Agreement shall become due and payable on June 1, 2021.

Principal, interest and all other amounts due with respect to the Loan, are payable in lawful money of the United States of America to Lender as set forth in the Loan Agreement. The principal amount of this Note and the interest rate applicable thereto, and all payments made with respect thereto, shall be recorded by Lender and, prior to any transfer hereof, endorsed on the grid attached hereto which is part of this Note.

This Note is referred to in, and is entitled to the benefits of, the Venture Loan and Security Agreement dated as of the date hereof (the “Loan Agreement”), among Borrower, Lender and Lender as Collateral Agent. The Loan Agreement, among other things, (a) provides for the making of a secured Loan to Borrower, and (b) contains provisions for acceleration of the maturity hereof upon the happening of certain stated events.

This Note may not be prepaid, except as set forth in Section 2.3 of the Loan Agreement.

This Note and the obligation of Borrower to repay the unpaid principal amount of the Loan, interest on the Loan and all other amounts due Lender under the Loan Agreement is secured under the Loan Agreement.

Presentment for payment, demand, notice of protest and all other demands and notices of any kind in connection with the execution, delivery, performance and enforcement of this Note are hereby waived.

Borrower shall pay all fees and expenses, including attorneys' fees and costs, incurred by Lender in the enforcement or attempt to enforce any of Borrower's obligations hereunder not performed when due.

Any reference herein to Lender shall be deemed to include and apply to every subsequent holder of this Note. Reference is made to the Loan Agreement for provisions concerning optional and mandatory prepayments, Collateral, acceleration and other material terms affecting this Note.

This Note shall be governed by and construed under the laws of the State of Connecticut. Borrower agrees that any action or proceeding brought to enforce or arising out of this Note may be commenced in the state or federal courts located within the State of Connecticut.

IN WITNESS WHEREOF, Borrower has caused this Note to be duly executed by one of its officers thereunto duly authorized on the date hereof.

BORROWER:

TITAN PHARMACEUTICALS, INC.

By: _____

Name: _____

Title: _____

(Signature page to Secured Promissory Note (Loan A/B/C))

EXHIBIT D

ITEMS TO BE COVERED BY OPINION OF BORROWER'S COUNSEL

1. Borrower is a corporation, duly organized, validly existing and in good standing under the laws of the State of Delaware, and is duly qualified and authorized to do business in the State of [].
 2. Borrower has the full corporate power, authority and legal right, and has obtained all necessary approvals, consents and given all notices to execute and deliver the Loan Documents and perform the terms thereof.
 3. The Loan Documents have been duly authorized, executed and delivered by Borrower.
 4. To our knowledge, there is no action, suit, audit, investigation, proceeding or patent claim pending or threatened against Borrower in any court or before any governmental commission, agency, board or authority which might have a Material Adverse Effect.
 5. The Shares (as defined in the Warrant) issuable pursuant to exercise or conversion of the Warrant have been duly authorized and reserved for issuance by Borrower and, when issued in accordance with the terms thereof, will be validly issued, fully paid and nonassessable.
 6. The shares of Common Stock issuable upon conversion of the Shares have been duly authorized and reserved and, when issued in accordance with the terms of Borrower's [Articles/Certificate] of Incorporation, as amended, will be validly issued, fully paid and nonassessable.
 7. The execution and delivery of the Loan Documents are not, and the issuance of the Shares upon exercise of the Warrant in accordance with the terms thereof will not be, inconsistent with Borrower's [Articles/Certificate] of Incorporation, as amended, or Bylaws, do not and will not contravene any law, governmental rule or regulation, judgment or order applicable to Borrower, and do not and will not conflict with or contravene any provision of, or constitute a default under, any indenture, mortgage, contract or other agreement or instrument of which Borrower is a party or by which it is bound or require the consent or approval of, the giving of notice to, the registration or filing with or the taking of any action in respect of or by, any federal, state or local government authority or agency or other person, except for the filing of notices pursuant to federal and state securities laws, which filings will be effected by the time required thereby.
-

EXHIBIT E

FORM OF OFFICER'S CERTIFICATE

TO: [HORIZON TECHNOLOGY FINANCE CORPORATION], as Lender

FROM: [_____], as Borrower

The undersigned authorized officer (“**Officer**”) of [_____], on behalf of itself and all other Borrowers under and as defined in the Loan Agreement (as defined herein below) (individually and collectively, jointly and severally, “**Borrower**”), hereby certifies that in accordance with the terms and conditions of the Loan and Security Agreement by and among Borrower, Collateral Agent, and the Lenders from time to time party thereto (the “**Loan Agreement**,” capitalized terms used but not otherwise defined herein shall have the meanings given them in the Loan Agreement),

(a) Borrower is in complete compliance for the period ending _____ with all required covenants except as noted below;

(b) There are no Events of Default, except as noted below;

(c) Except as noted below, all representations and warranties of Borrower stated in the Loan Documents are true and correct in all material respects on this date and for the period described in (a), above; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date.

(d) Borrower, and each of Borrower’s Subsidiaries, has timely filed all required tax returns and reports, Borrower, and each of Borrower’s Subsidiaries, has timely paid all foreign, federal, state, and local taxes, assessments, deposits and contributions owed by Borrower, or Subsidiary, except as otherwise permitted pursuant to the terms of Section 5.8 of the Loan Agreement;

(e) No Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Collateral Agent and the Lenders.

Attached are the required documents, if any, supporting our certification(s). The Officer, on behalf of Borrower, further certifies that the attached financial statements are prepared in accordance with Generally Accepted Accounting Principles (GAAP) and are consistently applied from one period to the next except as explained in an accompanying letter or footnotes and except, in the case of unaudited financial statements, for the absence of footnotes and subject to year-end audit adjustments as to the interim financial statements.

Please indicate compliance status since the last Officer’s Certificate by circling Yes, No, or N/A under “Complies” column.

Reporting Covenant		Requirement	Actual	Complies		
1)	Quarterly Financial Reports (with form 10Q)	Within 45 days after the end of each fiscal quarter		Yes	No	N/A
2)	Annual (CPA Audited) statements (with form 10K)	Within 180 days after FYE		Yes	No	N/A
3)	Annual Financial Projections/Budget (prepared on a monthly basis)	Annually (within 30 days of the earlier of (i) FYE or (ii) BoD approval), and when revised		Yes	No	N/A
4)	8-K Filings	If applicable, within 5 days of filing		Yes	No	N/A
5)	Officer's Certificate	Simultaneously with 10-Q and 10-K filings		Yes	No	N/A
6)	Total amount of Borrower's cash and cash equivalents at the last day of the measurement period	\$ _____				
7)	Total amount of Borrower's Subsidiaries' cash and cash equivalents at the last day of the measurement period	\$ _____				

Deposit and Securities Accounts: *(Please list all accounts; attach separate sheet if additional space needed)*

	Institution Name	Account Number	New Account?		Account Control Agreement in place?	
			Yes	No	Yes	No
1)			Yes	No	Yes	No
2)			Yes	No	Yes	No
3)			Yes	No	Yes	No
4)			Yes	No	Yes	No

Other Matters

If the response to any of the below is "Yes", please provide an explanation of the circumstances giving rise to such "Yes" response on an attachment hereto.

- | | | | |
|-----|--|-----|----|
| 1) | Have there been any changes in senior management since the last Officer's Certificate? | Yes | No |
| 2) | Has there been any transfers/sales/disposals/retirement or relocation of Collateral or IP prohibited by the Loan Agreement? | Yes | No |
| 3) | Have there been any new or pending claims or causes of action against Borrower that involve more than Fifty Thousand Dollars (\$50,000.00)? | Yes | No |
| 4) | Has any IP been abandoned, forfeited or dedicated to the public since the last Officer's Certificate? | Yes | No |
| 5) | Has any Default or Event of Default occurred since the last Officer's Certificate? | Yes | No |
| 6) | Has Borrower sold new shares of equity or made adjustments to existing shares of equity? If yes, please provide applicable supporting documentation. | Yes | No |
| 7) | Has any direct or indirect Subsidiary been formed since the last Officer's Certificate? | Yes | No |
| 8) | Has any piece of a Borrower's property been subject to a Lien (other than the lien of Lender pursuant to the Loan Agreement) since the date of the last Officer's Certificate? | Yes | No |
| 9) | Has any Borrower or any Subsidiary incurred any Indebtedness since the date of the last Officer's Certificate? | Yes | No |
| 10) | Has Borrower or any Subsidiary made any Investment since the date of the last Officer's Certificate? | Yes | No |

Exceptions: Please explain any exceptions with respect to the certification above: (If no exceptions exist, state "No exceptions." Attach separate sheet if additional space needed.)

[_____], on behalf of itself and all other Borrowers

By _____

Name: _____

Title: _____

Date: _____



TITAN PHARMACEUTICALS SECURES \$10 MILLION DEBT FACILITY FROM HORIZON TECHNOLOGY FINANCE

SOUTH SAN FRANCISCO, CA – July 27, 2017 – Titan Pharmaceuticals, Inc. (NASDAQ:TTNP), a specialty pharmaceutical company developing proprietary therapeutics for the treatment of select chronic diseases utilizing its ProNeura™ long-term, continuous drug delivery technology, announced today that it has entered into a venture loan and security agreement with Horizon Technology Finance Corporation (NASDAQ:HRZN), which provides Titan with up to \$10 million of available borrowing capacity.

A first tranche of \$7 million was funded upon execution of the loan agreement. A second tranche of \$3 million will be available to Titan, at its option, through March 31, 2018, subject to the satisfaction of certain revenue and product development milestones, and other borrowing conditions.

The loan agreement has a term of 46 months, with interest only payments through December 31, 2018, followed by equal monthly installments of principal and accrued interest for 30 months thereafter. The initial interest rate is 9.63%, which is based on a floating rate equal to the sum of the one month LIBOR (floor of 1.10%) plus 8.4%. Each loan tranche is also subject to a 5.0% final payment when the principal is paid in full. The loan is senior debt and is secured by all of Titan's assets, with the exception of its intellectual property.

"We believe this transaction balances our capital needs and opportunity to grow the company, and our commitment to minimizing dilution for shareholders to the extent possible," commented Titan President and CEO Sunil Bhonsle. "We were impressed with Horizon's ability to tailor a financing structure that matched Titan's objectives. We expect that our existing cash on hand, combined with the net proceeds from the first tranche of this loan, will be sufficient to fund planned operations into early 2019."

Gerald A. Michaud, President of Horizon, stated "We are pleased to provide this debt financing to Titan. The company's proprietary long-term drug delivery platform, ProNeura, represents a new standard of chronic disease management utilizing subdermal implants. We look forward to working with Titan as its lead product, Probuphine®, advances in the marketplace and the company continues to develop a growing pipeline of new treatments for select therapeutic markets."

In connection with this transaction, Titan issued to Horizon warrants to purchase an aggregate of 280,612 shares of Titan's common stock. The per share exercise price of these warrants is the lower of \$1.96 or the price per share of any securities that may be issued by the company in an equity financing during the next 18 months. The company also issued the lender a warrant that will only become exercisable upon the funding of the second tranche of the loan, with number of shares and exercise price to be calculated at such time. The company has agreed to file a registration statement with the Securities and Exchange Commission (SEC) within the next 90 days covering the resale of the shares underlying the lender warrants.

Armentum Partners served as financial advisor to Titan for this transaction.

About Titan Pharmaceuticals

Titan Pharmaceuticals Inc. (NASDAQ:TTNP), based in South San Francisco, CA, is developing proprietary therapeutics primarily for the treatment of serious medical disorders. The company's lead product is Probuphine®, a novel and long-acting formulation of buprenorphine for the long-term maintenance treatment of opioid dependence. Probuphine employs Titan's proprietary drug delivery system ProNeura™, which is capable of delivering sustained, consistent levels of medication for three months or longer. Titan has granted commercial rights in the U.S. and Canada for Probuphine to Braeburn Pharmaceuticals. Approved by the U.S. Food and Drug Administration in May 2016, Probuphine is the first and only commercialized treatment of opioid dependence to provide continuous, around-the-clock blood levels of buprenorphine for six months following a single procedure. The ProNeura technology has the potential to be used in developing products for treating other chronic conditions such as Parkinson's disease and hypothyroidism, where maintaining consistent, around-the-clock blood levels of medication may benefit the patient and improve medical outcomes. For more information about Titan, please visit www.titanpharm.com.

About Horizon Technology Finance

Horizon Technology Finance Corporation is a leading specialty finance company that provides capital in the form of secured loans to venture capital backed companies in the technology, life science, healthcare information and services, and cleantech industries. The investment objective of Horizon is to maximize its investment portfolio's return by generating current income from the debt investments it makes and capital appreciation from the warrants it receives when making such debt investments. Headquartered in Farmington, Connecticut, Horizon has regional offices in Pleasanton, California, Reston, Virginia and Boston, Massachusetts. Horizon's common stock trades on the NASDAQ Global Select Market under the ticker symbol "HRZN". To learn more, please visit www.horizontechfinance.com.

Forward-Looking Statements

This press release may contain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Such statements include, but are not limited to, any statements relating to our product development programs and any other statements that are not historical facts. Such statements involve risks and uncertainties that could negatively affect our business, operating results, financial condition and stock price. Factors that could cause actual results to differ materially from management's current expectations include those risks and uncertainties relating to the commercialization of Probuphine, the regulatory approval process, the development, testing, production and marketing of our drug candidates, patent and intellectual property matters and strategic agreements and relationships. We expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in our expectations or any changes in events, conditions or circumstances on which any such statement is based, except as required by law.

###

CONTACT:

Titan Pharmaceuticals, Inc.:
Sunil Bhonsle, President
(650) 244-4990

Investors:
Stephen Kilmer
(650) 989-2215
skilmer@titanpharm.com

Media:
Susan Thomas
(650) 989-2216
stthomas@titanpharm.com

Horizon Technology Finance:
Daniel R. Trolie
Chief Financial Officer
(860) 674-9977
dtrolie@horizontechfinance.com
