
**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): December 16, 2025

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

DELAWARE
(State or other jurisdiction
of incorporation)

001-39717
(Commission
File Number)

20-2903526
(I.R.S. Employer
Identification Number)

433 Plaza Real, Suite 275
Boca Raton, Florida 33432
(Address of principal executive offices)

(631) 830-7092
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (See General Instruction A.2. below):

- ☐ Written communications pursuant to Rule 425 under the Securities Act of 1933 (17 CFR 230.425)
- ☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- ☐ 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(e) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.0001 per share	LIXT	The NASDAQ Stock Market, LLC
Warrants to Purchase Common Stock, par value \$0.0001 per share	LIXTW	The NASDAQ Stock Market, LLC

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 a Material Definitive Agreement

On December 18, 2025, Lixte Biotechnology Holdings, Inc., a Delaware corporation (the “Company”), entered into a Securities Purchase Agreement (the “Purchase Agreement”) with certain accredited investors named therein (the “Purchasers”), pursuant to which the Company agreed to issue and sell, in a registered direct offering (the “Offering”) 526,342 shares (the “Common Shares”) of the Company’s Common Stock, par value \$0.0001 per share (the “Common Stock”), Pre-Funded Warrants (“Pre-Funded Warrants”) to purchase 525,000 shares of Common Stock at an offering price of \$4.09 per share (or \$4.08999 per Pre-Funded Warrant) and Common Warrants (“Common Warrants”) to purchase 1,051,342 shares of Common Stock at an offering price of \$3.96 per share.

The Offering is expected to result in gross proceeds of approximately \$4.3 million before deducting placement agent’s fees and related offering expenses. The Offering is expected to close on or about on December 23, 2025.

The Offering is being made pursuant to the Company’s existing shelf registration statement on Form S-3 (File No. 333-278874) (the “Registration Statement”), which was declared effective on May 2, 2024 by the U.S. Securities and Exchange Commission (the “Commission”), the base prospectus filed as part of the Registration Statement, and the prospectus supplement dated December 18, 2025. The Registration Statement, the base prospectus and the prospectus supplement relating are available on the SEC’s website at www.sec.gov.

Pursuant to a Placement Agent Agreement dated as of December 18, 2025 (the “Placement Agent Agreement”), the Company engaged Spartan Capital Securities, LLC (the “Placement Agent”) to act as the Company’s exclusive placement agent in connection with the Offering. The Company agreed to pay the Placement Agent a cash fee equal to 6.0% of the aggregate gross proceeds raised in the Offering and agreed to reimburse the Placement Agent \$85,000 for its legal fees.

The foregoing summaries of the Purchase Agreement and Placement Agent Agreement do not purport to be complete and are subject to and qualified in their entirety by such documents attached as Exhibits 10.1 and 10.2, respectively, to this Current Report on Form 8-K, and which are incorporated herein in their entirety by reference.

The Company is filing the opinion of its counsel, Sichenzia Ross Ference Carmel LLP, relating to the legality of the issuance and sale of the Common Shares, the Pre-Funded Warrants and Common Warrants as Exhibit 5.1 hereto and incorporated by reference.

This Form 8-K does not constitute an offer to sell any securities or a solicitation of an offer to buy any securities, nor shall there be any sale of any securities in any state or jurisdiction in which such an offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

Item 1.02 Termination of a Material Definitive Agreement

On December 16, 2025, the Company and Orbit Capital Inc., a Cayman Islands Corporation (the “Royalty Holder”) entered into a termination letter (“Termination Letter”), whereby the Company and the Royalty Holder terminated that certain Royalty Agreement dated November 24, 2025 (the “Royalty Agreement”).

Pursuant to the terms of the Royalty Agreement, the Company agreed to pay the Royalty Holder a royalty based on revenues derived from the Company Equipment acquired through the Share Exchange Agreement entered into on November 21, 2025, with the Royalty Holder.

In connection with the Termination Letter, the Company and the Royalty Holder released and forever discharged the other party, and their respective shareholders, directors and officers from any and all claims causes of actions, losses or damages that the Releasor (as defined in the Termination Letter) has or may have against any Covered Party (as defined in the Termination Letter) arising out of or in connection with the Royalty Agreement.

Capitalized terms used but not otherwise defined in Item 1.02 of this Form 8-K have the respective meanings ascribed thereto by the Share Exchange Agreement and the Royalty Agreement, as applicable.

Item 8.01. Other Events.

On December 18, 2025, the Company issued a pricing press release detailing Offering. A copy of the press release is filed as Exhibit 99.1 hereto and is incorporated by reference.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits. The following exhibits are filed herewith.

Exhibit Number	Description
4.1	Form of Pre-Funded Warrant
4.2	Form of Common Warrant
5.1	Opinion of Sichenzia Ross Ference Carmel LLP
10.1	Form of Securities Purchase Agreement
10.2	Form of Placement Agent Agreement
10.3	Termination Letter dated December 16, 2025, between Lixte Biotechnology Holdings, Inc. and Orbitz Capital Inc.
10.4	Royalty Agreement dated November 24, 2025, by and among the Company and Orbital Capital Inc. (Incorporated by reference to Form 8-K filed with the SEC on November 25, 2025).
10.5	Share Exchange Agreement, dated November 21, 2025, by and among the Company, Orbit Capital Inc., and Liora Technologies Europe Ltd. Incorporated by reference to Form 8-K filed with the SEC on November 25, 2025).
99.1	Press Release dated December 18, 2025
104	Cover Page Interactive Data File (embedded within the inline XBRL Document)

SIGNATURES

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.

Date: December 22, 2025

LIXTE BIOTECHNOLOGY HOLDINGS, INC.
(Registrant)

By: /s/ Geordan Pursglove

Geordan Pursglove

Chairman of the Board and Chief Executive Officer

REGISTERED PRE-FUNDED WARRANT TO PURCHASE COMMON STOCK

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

Warrant Shares:

Initial Exercise Date: [], 2025

Issuance Date: [], 2025

THIS PRE-FUNDED WARRANT TO PURCHASE COMMON STOCK (the “**Warrant**”) certifies that, for value received, [] or its assigns (the “**Holder**”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time until this Warrant is exercised in full (the “**Termination Date**”), to subscribe for and purchase from Lixte Biotechnology Holdings, Inc., a Delaware corporation (the “**Company**”), up to [] shares (as subject to adjustment hereunder, the “**Warrant Shares**”) of Common Stock. Subject to the provisions of Section 2.3, the purchase price of one (1) share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2.2.

1. **Definitions.** In addition to the terms defined elsewhere in this Warrant or in the Securities Purchase Agreement dated [], 2025 by and among the Company and the investors (the “**Purchasers**”) referred to therein (the “**Securities Purchase Agreement**”), the following terms have the meanings indicated in this Section 1:

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

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

1.3. “**Board of Directors**” means the board of directors of the Company.

1.4. “**Business Day**” means a Calendar Day other than a Saturday, Sunday or any other Calendar Day which is a federal legal holiday in the United States or any Calendar Day on which the commercial banks in the City of New York are required by law or other governmental action to close, provided that the commercial banks in the City of New York shall not be deemed to be required to be closed due to a “stay at home,” “shelter in place,” “non-essential employee” or similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in the City of New York generally are open for use by customers on such Calendar Day.

- 1.5. “**Calendar Day**” means each and every day of the week (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday).
- 1.6. “**Commission**” means the United States Securities and Exchange Commission.
- 1.7. “**Common Stock**” means the common stock of the Company, \$0.0001 par value per share, and any other class of securities into which such securities may hereafter be reclassified or changed.
- 1.8. “**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.
- 1.9. “**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.
- 1.10. “**Person**” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.
- 1.11. “**Registration Statement**” means the Company’s registration statement on Form S-3 (File No. 333-278874).
- 1.12. “**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.
- 1.13. “**Subsidiary**” means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.
- 1.14. “**Trading Day**” means a Calendar Day on which the principal Trading Market is open for trading.
- 1.15. “**Trading Market**” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

1.16. “**Transaction Documents**” means the Securities Purchase Agreement, these Warrants, such other Warrants as contemplated in the Securities Purchase Agreement, the Placement Agent Agreement and all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

1.17. “**Transfer Agent**” means Vstock Transfer, the current transfer agent of the Company, with a mailing address of 18 Lafayette Place, Woodmere, NY 11598, and any successor transfer agent of the Company.

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

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

2. **Exercise.**

2.1. **Exercise of Warrant.** Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise substantially in the form attached hereto as Exhibit 2.1 (the “**Notice of Exercise**”). Within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2.5.1 herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2.3 below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days after the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day after receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

2.2. **Exercise Price.** The aggregate exercise price of this Warrant, except for a nominal exercise price of \$0.00001 per Warrant Share, subject to adjustment hereunder (such nominal exercise price, the "**Exercise Price**"), was pre-funded to the Company on or prior to the Initial Exercise Date and, consequently, no additional consideration (other than such Exercise Price) shall be required to be paid by the Holder to any Person to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-paid aggregate exercise price under any circumstance or for any reason whatsoever. The remaining unpaid exercise price per Warrant Share is \$0.00001.

2.3. **Cashless Exercise.** This Warrant may also be exercised, in whole or in part, by means of a "cashless exercise" in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing $[(A-B) (X)]$ by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) delivered pursuant to Section 2.1 hereof on a Calendar Day that is not a Trading Day or (2) delivered pursuant to Section 2.1 hereof on a Trading Day prior to the opening of "regular trading hours" (as defined in Rule 600(b) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the highest Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. within two (2) hours of the Holder's delivery of the Notice of Exercise pursuant to Section 2.1 hereof if such Notice of Exercise is delivered during "regular trading hours," or within two (2) hours after the close of "regular trading hours" on a Trading Day or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is delivered pursuant to Section 2.1 hereof two (2) or more hours following the close of "regular trading hours" on such Trading Day;

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

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

2.4. **Holding Period for Cashless Exercise**. If Warrant Shares are issued in a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. Assuming (i) the Holder is not an Affiliate of the Company, and (ii) all of the applicable conditions of Rule 144 promulgated under the Securities Act with respect to Holder and the Warrant Shares are met in the case of such a cashless exercise, the Company agrees that the Company will cause the removal of the legend from such Warrant Shares (including by delivering an opinion of Sichenzia Ross Ference Carmel LLP to the Company's transfer agent at its own expense to ensure the foregoing), and the Company agrees that the Holder is under no obligation to sell the Warrant Shares issuable upon the exercise of the Warrant prior to removing the legend. The Company agrees not to take any position contrary to this Section 2.4.

2.5. **Mechanics of Exercise**

2.5.1. **Delivery of Warrant Shares upon Exercise**. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("**DWAC**") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise and otherwise by physical delivery of a certificate or by electronic delivery (at the election of the Holder), for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earlier of (i) one (1) Trading Day after the delivery to the Company of the Notice of Exercise and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "**Warrant Share Delivery Date**"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. Notwithstanding anything herein to the contrary, upon delivery of the Notice of Exercise, the Holder shall immediately be deemed for purposes of Regulation SHO under the Exchange Act to have become the holder of the Warrant Shares irrespective of the date of delivery of the Warrant Shares. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the third (3rd) Trading Day after the Warrant Share Delivery Date) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a Transfer Agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "**Standard Settlement Period**" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered on or prior to 12:00 p.m. (New York City time) on the Initial Exercise Date, which may be delivered at any time after the time of execution of the Securities Purchase Agreement, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Initial Exercise Date and the Initial Exercise Date shall be the Warrant Share Delivery Date for purposes hereunder, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received by such Warrant Share Delivery Date.

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

2.5.3. **Rescission Rights.** If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2.5.1 by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

2.5.4. **Compensation for Buy-In on Failure to Timely Deliver Warrant Shares upon Exercise.** In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2.5.1 above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored and return any amount received by the Company in respect of the Exercise Price for those Warrant Shares (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

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

2.5.6. **Charges, Taxes and Expenses.** Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that, in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto as Exhibit 2.5.6 duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-Trading Day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-Trading Day electronic delivery of the Warrant Shares.

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

2.6. **Holder's Exercise Limitations.** The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2.6, beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2.6 applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2.6, in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one (1) Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "**Beneficial Ownership Limitation**" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2.6, provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2.6 shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until sixty-one (61) Calendar Days after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2.6 to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

3. **Certain Adjustments.**

3.1. **Stock Dividends and Splits.** If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of Shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3.1 shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

3.2. **Subsequent Rights Offerings.** In addition to any adjustments pursuant to Section 3.1 above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to all (or substantially all) of the record holders of any class of shares of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

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

3.4. **Fundamental Transaction.** If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company or any Subsidiary, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock or 50% or more of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires 50% or more of the outstanding shares of Common Stock or 50% or more of the voting power of the common equity of the Company (each a “**Fundamental Transaction**”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2.6 on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “**Alternate Consideration**”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2.6 on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “**Successor Entity**”) to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3.4 pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant that is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock prior to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall be added to the term “Company” under this Warrant (so that from and after the occurrence or consummation of such Fundamental Transaction, each and every provision of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to each of the Company and the Successor Entity or Successor Entities, jointly and severally), and the Successor Entity or Successor Entities, jointly and severally with the Company, may exercise every right and power of the Company prior thereto and the Successor Entity or Successor Entities shall assume all of the obligations of the Company prior thereto under this Warrant and the other Transaction Documents with the same effect as if the Company and such Successor Entity or Successor Entities, jointly and severally, had been named as the Company herein. For the avoidance of doubt, the Holder shall be entitled to the benefits of the provisions of this Section 3.4 regardless of (i) whether the Company has sufficient authorized shares of Common Stock for the issuance of Warrant Shares and/or (ii) whether a Fundamental Transaction occurs prior to the Initial Exercise Date.

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

3.6. **Notice to Holder.**

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

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

4. **Transfer of Warrant.**

4.1. **Transferability.** This Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto as **Exhibit 2.5.6** duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days after the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

4.2. **New Warrants.** This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4.1, as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial Issuance Date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

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

5. **Miscellaneous.**

5.1. **No Rights as Stockholder until Exercise; No Settlement in Cash.** This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2.5.1, except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to Section 2.3 or to receive cash payments pursuant to Section 2.5.1 and Section 2.5.4 herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

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

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

5.4. **Authorized Shares.**

5.4.1. **Reservation of Authorized and Unissued Shares.** The Company covenants that, while the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares of Common Stock to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable (which means that no further sums are required to be paid by the holders thereof in connection with the issue thereof) and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue). If the Company does not have a sufficient number of authorized and unissued shares of Common Stock available to honor the exercise of Warrants, the Company shall allocate the available number of Warrant Shares on a pro rata basis among all Holders exercising Warrants, until such time as the Company has a sufficient number of authorized Common Stock to issue all Warrant Shares in full.

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

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

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

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

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

5.8. **Notices.** Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at 433 Plaza Real, Suite 275 Boca Raton, Florida 33432, Attention: Geordan Pursglove, Chief Executive Officer, email address: g.pursglove@2gpgroup.com, or such other email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section 5.8 prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section 5.8 on a Calendar Day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

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

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

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

5.12. **Amendment**. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and a majority-in-interest of Holders of the Warrants, on the other hand.

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

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

[LIXT Investor Registered Pre-Funded Warrant Signature Page Follows]

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

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

By: _____

Name: Geordan Pursglove

Its: Chief Executive Officer

NOTICE OF EXERCISE

TO: LIXTE BIOTECHNOLOGY HOLDINGS, INC.

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

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

☐ in lawful money of the United States.

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in Section 2.3, to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in Section 2.3.

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

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

Name of Investing Entity:
Signature of Authorized Signatory of Investing Entity:
Name of Authorized Signatory:
Title of Authorized Signatory:
Date:

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to exercise the Warrant to purchase shares of Common Stock.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name:	
Address:	
Phone Number:	
Email Address:	
Date:	
Holder's Signature:	
Holder's Address:	

REGISTERED COMMON WARRANT TO PURCHASE COMMON STOCK

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

Warrant Shares:

Initial Exercise Date: [], 2025

Issuance Date: [], 2025

THIS WARRANT TO PURCHASE COMMON STOCK (the “**Warrant**”) certifies that, for value received, [] or its assigns (the “**Holder**”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the Initial Exercise Date and on or prior to 5:00 p.m. (New York City time) on [], 2030 (the “**Termination Date**”) but not thereafter, to subscribe for and purchase from Lixte Biotechnology Holdings, Inc., a Delaware corporation (the “**Company**”), up to [] shares (as subject to adjustment hereunder, the “**Warrant Shares**”) of Common Stock. Subject to the provisions of Section 2.3, the purchase price of one (1) share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2.2.

1. **Definitions.** In addition to the terms defined elsewhere in this Warrant or in the Securities Purchase Agreement dated [], 2025 by and among the Company and the investors (the “**Purchasers**”) referred to therein (the “**Securities Purchase Agreement**”), the following terms have the meanings indicated in this Section 1:

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

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

1.3. “**Board of Directors**” means the board of directors of the Company.

1.4. “**Business Day**” means a Calendar Day other than a Saturday, Sunday or any other Calendar Day which is a federal legal holiday in the United States or any Calendar Day on which the commercial banks in the City of New York are required by law or other governmental action to close, provided that the commercial banks in the City of New York shall not be deemed to be required to be closed due to a “stay at home,” “shelter in place,” “non-essential employee” or similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in the City of New York generally are open for use by customers on such Calendar Day.

- 1.5. “**Calendar Day**” means each and every day of the week (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday).
- 1.6. “**Commission**” means the United States Securities and Exchange Commission.
- 1.7. “**Common Stock**” means the common stock of the Company, \$0.0001 par value per share, and any other class of securities into which such securities may hereafter be reclassified or changed.
- 1.8. “**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.
- 1.9. “**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.
- 1.10. “**Person**” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.
- 1.11. “**Registration Statement**” means the Company’s registration statement on Form S-3 (File No. 333-278874).
- 1.12. “**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.
- 1.13. “**Subsidiary**” means any subsidiary of the Company and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.
- 1.14. “**Trading Day**” means a Calendar Day on which the principal Trading Market is open for trading.
- 1.15. “**Trading Market**” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, OTCQB or OTCQX (or any successors to any of the foregoing).

1.16. “**Transaction Documents**” means the Securities Purchase Agreement, these Warrants, such other Warrants as contemplated in the Securities Purchase Agreement, the Placement Agent Agreement, and all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

1.17. “**Transfer Agent**” means Vstock Transfer the current transfer agent of the Company, with a mailing address of 18 Lafayette Place, Woodmere, NY 11598, and any successor transfer agent of the Company.

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

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

2. **Exercise.**

2.1. **Exercise of Warrant.** Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise substantially in the form attached hereto as **Exhibit 2.1** (the “**Notice of Exercise**”). Within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2.6.1 herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2.3 below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days after the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day after receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

2.2. **Exercise Price.** The exercise price per Warrant Share shall be \$3.96, subject to adjustment hereunder (the “**Exercise Price**”).

2.3. **Cashless Exercise.** If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder or the resale of the Warrant Shares by the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) delivered pursuant to Section 2.1 hereof on a Calendar Day that is not a Trading Day or (2) delivered pursuant to Section 2.1 hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the highest Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. within two (2) hours of the Holder’s delivery of the Notice of Exercise pursuant to Section 2.1 hereof if such Notice of Exercise is delivered during “regular trading hours,” or within two (2) hours after the close of “regular trading hours” on a Trading Day or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is delivered pursuant to Section 2.1 hereof two (2) or more hours following the close of “regular trading hours” on such Trading Day;

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

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

2.4. **Automatic Cashless Exercise on Termination Date.** Notwithstanding anything herein to the contrary, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to Section 2.3. If such automatic exercise would result in the Holder exceeding the Beneficial Ownership Limitation, as defined in Section 2.7 hereof, then the Company shall hold in abeyance delivery of any Shares in excess of such Beneficial Ownership Limitation until such time as the Holder notifies the Company that delivery of such Shares would not exceed the Beneficial Ownership Limitation.

2.5. **Holding Period for Cashless Exercise.** If Warrant Shares are issued in a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. Assuming (i) the Holder is not an Affiliate of the Company, and (ii) all of the applicable conditions of Rule 144 promulgated under the Securities Act with respect to Holder and the Warrant Shares are met in the case of such a cashless exercise, the Company agrees that the Company will cause the removal of the legend from such Warrant Shares (including by delivering an opinion of Sichenzia Ross Ference Carmel LLP to the Company's transfer agent at its own expense to ensure the foregoing), and the Company agrees that the Holder is under no obligation to sell the Warrant Shares issuable upon the exercise of the Warrant prior to removing the legend. The Company agrees not to take any position contrary to this Section 2.5.

2.6. **Mechanics of Exercise.**

2.6.1. **Delivery of Warrant Shares upon Exercise.** The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("**DWAC**") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise and otherwise by physical delivery of a certificate or by electronic delivery (at the election of the Holder), for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earlier of (i) one (1) Trading Day after the delivery to the Company of the Notice of Exercise and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the "**Warrant Share Delivery Date**"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) one (1) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. Notwithstanding anything herein to the contrary, upon delivery of the Notice of Exercise, the Holder shall immediately be deemed for purposes of Regulation SHO under the Exchange Act to have become the holder of the Warrant Shares irrespective of the date of delivery of the Warrant Shares. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the third (3rd) Trading Day after the Warrant Share Delivery Date) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a Transfer Agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, "**Standard Settlement Period**" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered on or prior to 12:00 p.m. (New York City time) on the Initial Exercise Date, which may be delivered at any time after the time of execution of the Securities Purchase Agreement, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Initial Exercise Date and the Initial Exercise Date shall be the Warrant Share Delivery Date for purposes hereunder, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received by such Warrant Share Delivery Date.

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

2.6.3. **Rescission Rights.** If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2.6.1 by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

2.6.4. **Compensation for Buy-In on Failure to Timely Deliver Warrant Shares upon Exercise.** In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2.6.1 above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored and return any amount received by the Company in respect of the Exercise Price for those Warrant Shares (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

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

2.6.6. **Charges, Taxes and Expenses.** Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that, in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto as Exhibit 2.6.6 duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-Trading Day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-Trading Day electronic delivery of the Warrant Shares.

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

2.7. **Holder's Exercise Limitations.** The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2.7, beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2.7 applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2.7, in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within one (1) Trading Day confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "**Beneficial Ownership Limitation**" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2.7, provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2.7 shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until sixty-one (61) Calendar Days after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2.7 to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

3. **Certain Adjustments.**

3.1. **Stock Dividends and Splits.** If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of Shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3.1 shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

3.2. **Subsequent Rights Offerings.** In addition to any adjustments pursuant to Section 3.1 above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to all (or substantially all) of the record holders of any class of shares of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

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

3.4. **Fundamental Transaction.** If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company or any Subsidiary, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock or 50% or more of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires 50% or more of the outstanding shares of Common Stock or 50% or more of the voting power of the common equity of the Company (each a “**Fundamental Transaction**”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2.7 on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “**Alternate Consideration**”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2.7 on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “**Successor Entity**”) to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3.4 pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant that is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock prior to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall be added to the term “Company” under this Warrant (so that from and after the occurrence or consummation of such Fundamental Transaction, each and every provision of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to each of the Company and the Successor Entity or Successor Entities, jointly and severally), and the Successor Entity or Successor Entities, jointly and severally with the Company, may exercise every right and power of the Company prior thereto and the Successor Entity or Successor Entities shall assume all of the obligations of the Company prior thereto under this Warrant and the other Transaction Documents with the same effect as if the Company and such Successor Entity or Successor Entities, jointly and severally, had been named as the Company herein. For the avoidance of doubt, the Holder shall be entitled to the benefits of the provisions of this Section 3.4 regardless of (i) whether the Company has sufficient authorized shares of Common Stock for the issuance of Warrant Shares and/or (ii) whether a Fundamental Transaction occurs prior to the Initial Exercise Date.

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

3.6. **Notice to Holder.**

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

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

3.7. **Voluntary Adjustment by Company.** Subject to the rules and regulations of the Trading Market and the consent of the Holder, the Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors.

4. **Transfer of Warrant.**

4.1. **Transferability.** This Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto as Exhibit 2.6.6 duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days after the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

4.2. **New Warrants.** This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4.1, as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial Issuance Date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

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

5. **Miscellaneous.**

5.1. **No Rights as Stockholder until Exercise; No Settlement in Cash.** This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2.6.1, except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to Section 2.3 or to receive cash payments pursuant to Section 2.6.1 and Section 2.6.4 herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

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

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

5.4. **Authorized Shares.**

5.4.1. **Reservation of Authorized and Unissued Shares.** The Company covenants that, while the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares of Common Stock to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable (which means that no further sums are required to be paid by the holders thereof in connection with the issue thereof) and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue). If the Company does not have a sufficient number of authorized and unissued shares of Common Stock available to honor the exercise of Warrants, the Company shall allocate the available number of Warrant Shares on a pro rata basis among all Holders exercising Warrants, until such time as the Company has a sufficient number of authorized Common Stock to issue all Warrant Shares in full.

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

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

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

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

5.7. **Nonwaiver and Expenses**. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies, notwithstanding the fact that the right to exercise this Warrant terminates on the Termination Date. No provision of this Warrant shall be construed as a waiver by the Holder of any rights which the Holder may have under the federal securities laws and the rules and regulations of the Commission thereunder. Without limiting any other provision of this Warrant or the Securities Purchase Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

5.8. **Notices**. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at 433 Plaza Real, Suite 275 Boca Raton, Florida 33432, Attention: Geordan Pursglove, Chief Executive Officer, email address: g.pursglove@2gpgroup.com, or such other email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the e-mail address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section 5.8 prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section 5.8 on a Calendar Day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

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

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

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

5.12. **Amendment.** This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and a majority-in-interest of Holders of the Warrants, on the other hand.

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

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

[LIXT Investor Registered Common Warrant Signature Page Follows]

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

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

By: _____

Name: Geordan Pursglove

Its: Chief Executive Officer

NOTICE OF EXERCISE

TO: LIXTE BIOTECHNOLOGY HOLDINGS, INC.

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

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

☐ in lawful money of the United States.

☐ if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in Section 2.3, to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in Section 2.3.

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

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

Name of Investing Entity:	
Signature of Authorized Signatory of Investing Entity:	
Name of Authorized Signatory:	
Title of Authorized Signatory:	
Date:	

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to exercise the Warrant to purchase shares of Common Stock.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name:	_____
Address:	_____
Phone Number:	_____
Email Address:	_____
Date:	_____
Holder's Signature:	_____
Holder's Address:	_____



December 22, 2025

Lixte Biotechnology Holdings, Inc.
433 Plaza Real, Suite 275
Boca Raton, Florida 33432

Re: Registered Direct Offering Pursuant to Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Lixte Biotechnology Holdings, Inc., a Delaware corporation (the “Company”), in connection with the Securities Purchase Agreement dated December 18, 2025 (the “Purchase Agreement”), by and between the Company and the purchaser signatories thereto (the “Purchasers”), relating to the issuance and sale by the Company to the Purchasers of (i) 526,342 shares (the “Shares”) of the Company’s common stock, \$0.0001 par value per share (the “Common Stock”); (ii) Pre-Funded Warrants (the “Pre-Funded Warrants”) to purchase 525,000 shares of Common Stock; and (iii) Common Warrants (the “Common Warrants”, and together with the Pre-Funded Warrants, the “Warrants”) to purchase 1,051,342 shares of Common Stock (the “Common Warrant Shares”, and together with the Prefunded Warrant Shares, the “Warrant Shares”).

This opinion is being delivered in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act of 1933, as amended (the “Securities Act”).

In connection with this opinion, we have examined originals or copies, certified or otherwise identified to our satisfaction, of the following:

1. The Company’s Certificate of Incorporation, as amended (the “Articles”);
2. The Amended and Restated Bylaws of the Company;
3. The Purchase Agreement;
4. Registration Statement on Form S-3 (File No. 333-278874) filed by the Company with the Securities and Exchange Commission (the “Commission”) on April 23, 2024, in the form in which it became effective on May 2, 2024 (the “Registration Statement”) pursuant to the Securities Act;
5. The prospectus supplement dated December 18, 2025, filed with the Commission pursuant to Rule 424(b)(5) promulgated under the Securities Act (the “Prospectus Supplement”), together with the base prospectus dated May 2, 2024;
6. The engagement agreement by and between the Company and Spartan Capital Securities, LLC (the “Placement Agent”) dated December 18, 2025, 2025 (the “Engagement Agreement”); and
7. Unanimous Written Consent of the Board of Directors of the Company approving the Purchase Agreement.

We have also examined originals or copies, certified or otherwise identified to our satisfaction, of such records of the Company and such agreements, certificates and receipts of public officials, certificates of officers or other representatives of the Company and others, and such other documents as we have deemed necessary or appropriate as a basis for the opinions stated below.

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In our examination, we have assumed the genuineness of all signatures, including endorsements, the legal capacity and competency of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as facsimile, electronic, certified or photostatic copies, and the authenticity of the originals of such copies. In making our examination of executed documents, we have assumed (i) that the parties thereto, other than the Company, had the power, corporate or other, to enter into and perform all obligations thereunder and (ii) the due authorization by all requisite action, corporate or other, and the execution and delivery by such parties of such documents, and the validity and binding effect thereof on such parties.

The opinion expressed below is limited to the federal securities laws of the United States of America and the corporate laws of the State of Delaware and we express no opinion as to the effect on the matters covered by the laws of any other jurisdiction.

Based upon and subject to the foregoing, we are of the opinion that when the Shares have been delivered to and paid for by the Purchaser as contemplated by the Purchase Agreement, the Shares will be duly authorized, validly issued, fully paid and non-assessable. The Warrant Shares issuable upon exercise of the Warrants have been duly authorized and reserved for issuance and, when issued to the holders of the Warrants in accordance with the terms of the Warrants, will be validly issued, fully paid and non-assessable.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Company's Current Report on Form 8-K being filed on the date hereof and incorporated by reference into the Registration Statement. We also hereby consent to the reference to our firm under the caption "Legal Matters" in the Prospectus Supplement. In giving this consent, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder. This opinion is expressed as of the date hereof unless otherwise expressly stated, and we disclaim any undertaking to advise you of any subsequent changes in the facts stated or assumed herein or of any subsequent changes in applicable laws.

Very truly yours,

/s/ Sichenzia Ross Ference Carmel LLP
Sichenzia Ross Ference Carmel LLP

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SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this “**Agreement**”) is dated as of [____], between [____] (the “**Company**”), and each purchaser identified on the signature pages hereto (including their respective successors and assigns, each a “**Purchaser**” and collectively, the “**Purchasers**”).

WHEREAS, subject to the terms and conditions set forth in this Agreement and pursuant to an effective shelf registration statement under the Securities Act of 1933, as amended (the “**Securities Act**”), the Company desires to issue and sell to each Purchaser, and each Purchaser, severally and not jointly, desires to purchase from the Company, securities of the Company as more fully described in this Agreement.

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Company and each Purchaser agree as follows:

1. **Definitions.** In addition to the terms defined elsewhere in this Agreement, for all purposes of this Agreement, the following terms have the meanings set forth in this Section 1:
 - 1.1. “**Acquiring Person**” shall have the meaning ascribed to such term in Section 4.5.
 - 1.2. “**Action**” shall have the meaning ascribed to such term in Section 3.2.5.
 - 1.3. “**Affiliate**” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.
 - 1.4. “**Agreement**” shall have the meaning ascribed to such term in the preamble.
 - 1.5. “**BHCA**” shall have the meaning ascribed to such term in Section 3.2.35.
 - 1.6. “**Board of Directors**” means the board of directors of the Company.
 - 1.7. “**Business Day**” means a Calendar Day other than a Saturday, Sunday or any other Calendar Day which is a federal legal holiday in the United States or any Calendar Day on which the commercial banks in the City of New York are required by law or other governmental action to close, provided that the commercial banks in the City of New York shall not be deemed to be required to be closed due to a “stay at home,” “shelter in place,” “non-essential employee” or similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in the City of New York generally are open for use by customers on such Calendar Day.
 - 1.8. “**Calendar Day**” means each and every day of the week (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday).
-

- 1.9. “**Closing**” means the closing of the purchase and sale of the Securities pursuant to Section 2.1.
- 1.10. “**Closing Date**” means the Trading Day on which all of the Transaction Documents have been executed and delivered by the applicable parties thereto, and all conditions precedent to (i) the Purchasers’ obligations to pay the Subscription Amount and (ii) the Company’s obligations to deliver the Securities, in each case, have been satisfied or waived, but in no event later than the second (2nd) Trading Day following the date hereof.
- 1.11. “**Code**” means the Internal Revenue Code of 1986, as amended.
- 1.12. “**Commission**” means the United States Securities and Exchange Commission.
- 1.13. “**Common Stock**” means the common stock of the Company, \$0.0001 par value per share, and any other class of securities into which such securities may hereafter be reclassified or changed.
- 1.14. “**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.
- 1.15. “**Common Warrants**” means the warrants to purchase shares of Common Stock delivered to the Purchasers at the Closing in accordance with Section 2.2.1 hereof, which Common Warrants shall be in the form of **Exhibit 1.15.1** attached hereto.
- 1.16. “**Company**” shall have the meaning ascribed to such term in the preamble.
- 1.17. “**Company Counsel**” means with respect to U.S. federal securities law and New [_____].
- 1.18. “**Disclosure Schedules**” means the Disclosure Schedules of the Company delivered concurrently herewith.
- 1.19. “**Disclosure Time**” means, (i) if this Agreement is signed on a Calendar Day that is not a Trading Day or after 9:00 a.m. (New York City time) and before midnight (New York City time) on any Trading Day, 9:01 a.m. (New York City time) on the Trading Day immediately following the date hereof, unless otherwise instructed as to an earlier time by the Placement Agent, and (ii) if this Agreement is signed between midnight (New York City time) and 9:00 a.m. (New York City time) on any Trading Day, no later than 9:01 a.m. (New York City time) on the date hereof, unless otherwise instructed as to an earlier time by the Placement Agent.
- 1.20. “**DVP**” shall have the meaning ascribed to such term in Section 2.1.
- 1.21. “**Evaluation Date**” shall have the meaning ascribed to such term in Section 3.2.14.

- 1.22. “**Exchange Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.
- 1.23. “**FCPA**” means the Foreign Corrupt Practices Act of 1977, as amended.
- 1.24. “**FDA**” shall have the meaning ascribed to such term in Section 3.2.38.
- 1.25. “**FDCA**” shall have the meaning ascribed to such term in Section 3.2.38.
- 1.26. “**Federal Reserve**” shall have the meaning ascribed to such term in Section 3.2.35.
- 1.27. “**GAAP**” shall have the meaning ascribed to such term in Section 3.2.3.
- 1.28. “**Indebtedness**” shall have the meaning ascribed to such term in Section 3.2.22.
- 1.29. “**Intellectual Property Rights**” shall have the meaning ascribed to such term in Section 3.2.11.
- 1.30. “**IT Systems and Data**” shall have the meaning ascribed to such term in Section 3.2.39.
- 1.31. “**Lien**” means a lien, charge pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction.
- 1.32. “**Material Adverse Effect**” shall have the meaning assigned to such term in Section 3.1.2.
- 1.33. “**Material Permits**” shall have the meaning ascribed to such term in Section 3.2.9.
- 1.34. “**Money Laundering Laws**” shall have the meaning ascribed to such term in Section 3.2.36.
- 1.35. “**OFAC**” shall have the meaning ascribed to such term in Section 3.2.33.
- 1.36. “**Per Unit Purchase Price**” equals \$[●] (less \$0.00001 for each Pre-Funded Warrant), subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement.
- 1.37. “**Person**” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.
- 1.38. “**PFIC**” shall have the meaning ascribed to such term in Section 4.13.
- 1.39. “**Pharmaceutical Product**” shall have the meaning ascribed to such term in Section 3.2.38.
- 1.40. “**Placement Agent**” means Spartan Capital Securities, LLC

- 1.41. “**Placement Agent Agreement**” means the placement agent agreement, dated on or about the date hereof, between the Company and the Placement Agent relating to the purchase and sale of the Securities under this Agreement and the purchase and sale of Securities to other accredited investors pursuant to the terms of such Placement Agent Agreement.
- 1.42. “**Pre-Funded Warrants**” means the pre-funded Common Stock purchase warrants, in the form of **Exhibit 1.42.1** attached hereto delivered to the Purchasers at the Closing in accordance with Section 2.2.1 hereof, which Pre-Funded Warrants shall be exercisable immediately and shall expire when exercised in full.
- 1.43. “**Proceeding**” means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened.
- 1.44. “**Prospectus**” means the final base prospectus filed for the Shelf Registration Statement.
- 1.45. “**Prospectus Supplement**” means the supplement to the Prospectus complying with Rule 424(b) of the Securities Act that is filed with the Commission and delivered by the Company to each Purchaser at the Closing.
- 1.46. “**Purchaser**” shall have the meaning ascribed to such term in the preamble.
- 1.47. “**Purchaser Party**” shall have the meaning ascribed to such term in Section 4.8.
- 1.48. “**Required Approvals**” shall have the meaning ascribed to such term in Section 3.1.5.
- 1.49. “**Rule 144**” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.
- 1.50. “**Rule 424**” means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.
- 1.51. “**SEC Reports**” shall have the meaning ascribed to such term in Section 3.2.3.
- 1.52. “**Securities**” means the Shares, the Warrants and the Warrant Shares purchased pursuant to this Agreement.
- 1.53. “**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

- 1.54. “**Shares**” means the shares of Common Stock issued or issuable to each Purchaser pursuant to this Agreement, but excluding the Warrant Shares.
- 1.55. “**Shelf Registration Statement**” means the effective registration statement on Form S-3 with Commission [____], including all information, documents and exhibits filed with or incorporated by reference into such registration statement, which registers the sale of the Securities to the Purchasers.
- 1.56. “**Short Sales**” means all “short sales” as defined in Rule 200 of Regulation SHO under the Exchange Act (but shall not be deemed to include locating and/or borrowing shares of Common Stock).
- 1.57. “**Subscription Amount**” means, as to each Purchaser, the aggregate amount to be paid for the Securities purchased hereunder as specified below such Purchaser’s name on the signature page of this Agreement and next to the heading “Subscription Amount,” in United States dollars and in immediately available funds.
- 1.58. “**Subsidiary**” means any subsidiary of the Company as set forth in Schedule 3.1.1 and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.
- 1.59. “**Trading Day**” means a Calendar Day on which the principal Trading Market is open for trading.
- 1.60. “**Trading Market**” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, the OTCQB, OTCQX, Pink Open Market (or any successors to any of the foregoing).
- 1.61. “**Transaction Documents**” means this Agreement, the Securities, and all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.
- 1.62. “**Transfer Agent**” means [____], the current transfer agent of the Company, with a mailing address of [____], and any successor transfer agent of the Company.
- 1.63. “**Warrants**” means, collectively, the Pre-Funded Warrants and the Common Warrants.
- 1.64. “**Warrant Shares**” means the shares of Common Stock underlying the Warrants.

2. **Purchase and Sale.**

2.1. **Closing.** On the Closing Date, upon the terms and subject to the conditions set forth herein, substantially concurrent with the execution and delivery of this Agreement by the parties hereto, the Company agrees to sell, and the Purchasers, severally and not jointly, agree to purchase, up to an aggregate of approximately \$[●] million of Shares and Warrants; provided, however, that a Purchaser in its sole discretion, may elect to purchase Pre-Funded Warrants in lieu of Shares in such manner to result in the same aggregate purchase price being paid by such Purchaser less \$0.00001 per Pre-Funded Warrant. Each Purchaser shall deliver to the Company, via wire transfer, immediately available funds equal to such Purchaser's Subscription Amount as set forth on the signature page hereto executed by such Purchaser, and the Company shall deliver to each Purchaser its respective Securities, as determined pursuant to Section 2.2.1, and the Company and each Purchaser shall deliver the other items set forth in Section 2.2.2 deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.3.1 and 2.3.2, the Closing shall occur at the offices of counsel to the Placement Agent or such other location (or remotely by electronic means) as the parties shall mutually agree. Unless otherwise directed by the Placement Agent, settlement of the Shares shall occur via "Delivery Versus Payment" ("**DVP**") (i.e., on the Closing Date, the Company shall issue the Shares registered in the Purchasers' names and addresses and released by the Transfer Agent directly to the account(s) at the Placement Agent identified by each Purchaser; upon receipt of such Shares, the Placement Agent shall promptly electronically deliver such Shares to the applicable Purchaser, and payment therefor shall be made by the Placement Agent (or its clearing firm) by wire transfer to the Company). Notwithstanding anything herein to the contrary, if at any time on or after the time of execution of this Agreement by the Company and an applicable Purchaser, through and including the time immediately prior to the Closing (the "**Pre-Settlement Period**"), if such Purchaser sells to any Person all, or any portion, of any Shares or Warrant Shares to be issued hereunder to such Purchaser at the Closing (collectively, the "**Pre-Settlement Shares**"), such Purchaser shall, automatically hereunder (without any additional required actions by such Purchaser or the Company), be deemed to be unconditionally bound to purchase, and the Company shall be deemed unconditionally to sell, such Pre-Settlement Shares at the Closing; provided, that the Company shall not be required to deliver any Pre-Settlement Shares to such Purchaser prior to the Company's receipt of the purchase price for such Pre-Settlement Shares hereunder, and provided further that the Company hereby acknowledges and agrees that the foregoing shall not constitute a representation or covenant by such Purchaser as to whether or not such Purchaser will elect to sell any Pre-Settlement Shares during the Pre-Settlement Period. The decision to sell any Pre-Settlement Shares will be made in the sole discretion of such Purchaser from time to time, including during the Pre-Settlement Period.

2.2. **Deliveries.**

2.2.1. The Company shall deliver or cause to be delivered to each Purchaser or the Placement Agent, as appropriate, the following at the times stated:

2.2.1.1 on the date hereof:

2.2.1.1.1. this Agreement duly executed by the Company.

2.2.1.1.2. the Placement Agent Agreement, duly executed by the Company.

2.2.1.1.3. a certificate executed by the Chief Financial Officer of the Company in customary form reasonably satisfactory to the Placement Agent and its counsel.

2.2.1.2 on or prior to the Closing Date:

2.2.1.2.1. a legal opinion of Company Counsel, addressed to the Placement Agent and the Purchasers, in form and substance reasonably acceptable to the Placement Agent and the Purchasers.

2.2.1.2.2. for each Purchaser of Pre-Funded Warrants pursuant to Section 2.1, a Pre-Funded Warrant registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to the portion of such Purchaser's Subscription Amount applicable to Pre-Funded Warrants divided by the Per Unit Purchase Price, with an exercise price equal to \$0.00001, subject to adjustment as provided therein.

2.2.1.2.3. the Common Warrants registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to 100.0% of the sum of the number of Shares and Pre-Funded Warrants stated on such Purchaser's signature page hereto.

2.2.1.2.4. subject to the provisions of Section 2.1 regarding settlement via DVP, the Company's wire instructions.

2.2.1.2.5. a duly executed and delivered Officers' Certificate, in customary form reasonably satisfactory to the Placement Agent and its counsel.

2.2.1.2.6. a cold comfort letter from the Company's auditor, addressed to the Placement Agent in form and substance reasonably satisfactory in all material respects.

2.2.1.2.7. The Company shall have provided the Placement Agent the signed flow of funds executed by the Chief Executive Officer or Chief Financial Officer and shall make the disbursements contained therein upon Closing.

2.2.1.2.8. the Prospectus and Prospectus Supplement (which may be delivered in accordance with Rule 172 under the Securities Act).

2.2.2. Each Purchaser, and the Placement Agent, as applicable, shall deliver or cause to be delivered to the Company, as applicable, the following at the times stated:

2.2.2.1 on the date hereof, this Agreement duly executed by such Purchaser.

2.2.2.2 on or prior to the Closing Date:

2.2.2.2.1. such Purchaser's Subscription Amount shall be made available for DVP settlement with the Company or its designee.

2.2.2.2.2. the Placement Agent Agreement, duly executed by the Placement Agent.

2.3. Closing Conditions.

2.3.1. The obligations of the Company hereunder in connection with the Closing are subject to each of the following conditions being met:

2.3.1.1 the accuracy in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) when made and on the Closing Date of the representations and warranties of the Purchasers contained herein (unless as of a specific date therein in which case they shall be accurate as of such date).

2.3.1.2 all obligations, covenants and agreements of each Purchaser required to be performed at or prior to the Closing Date shall have been performed.

2.3.1.3 the delivery by each Purchaser of the items set forth in Section 2.2.2 of this Agreement.

2.3.2. The respective obligations of the Purchasers hereunder in connection with the Closing are subject to each of the following conditions being met:

2.3.2.1 the accuracy in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) when made and on the Closing Date of the representations and warranties of the Company contained herein (unless as of a specific date therein in which case they shall be accurate as of such date).

2.3.2.2 all obligations, covenants and agreements of the Company required to be performed at or prior to the Closing Date shall have been performed.

2.3.2.3 the delivery by the Company of the items set forth in Section 2.2.1 of this Agreement.

2.3.2.4 there shall have been no Material Adverse Effect with respect to the Company since the date hereof.

2.3.2.5 from the date hereof to the Closing Date, trading in the Common Stock shall not have been suspended by the Commission or the Company's principal Trading Market, and, at any time prior to the Closing Date, trading in securities generally as reported by Bloomberg L.P. shall not have been suspended or limited, or minimum prices shall not have been established on securities whose trades are reported by such service, or on any Trading Market, nor shall a banking moratorium have been declared either by the United States or New York State authorities nor shall there have occurred any material outbreak or escalation of hostilities or other national or international calamity of such magnitude in its effect on, or any material adverse change in, any financial market which, in each case, in the reasonable judgment of such Purchaser, makes it impracticable or inadvisable to purchase the Securities at the Closing.

3. **Representations and Warranties.**

3.1. **Representations and Warranties of the Company.** The Company hereby makes the following representations and warranties to each Purchaser:

3.1.1. **Subsidiaries.** All of the direct and indirect subsidiaries of the Company are set forth in the SEC Reports. Except as otherwise set forth in the SEC Reports, the Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any Liens, and all of the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities. If the Company has no subsidiaries, all other references to the Subsidiaries or any of them in the Transaction Documents shall be disregarded.

3.1.2. **Organization and Qualification.** Each of the Company and its operating Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in: (i) a material adverse effect on the legality, validity or enforceability of any Transaction Document, (ii) a material adverse effect on the results of operations, assets, business, prospects or condition (financial or otherwise) of the Company and the Subsidiaries, taken as a whole, or (iii) a material adverse effect on the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document (any of (i), (ii) or (iii), a "**Material Adverse Effect**"; provided, however, that "**Material Adverse Effect**" shall not include any event, occurrence, fact, condition or change, directly or indirectly, arising out of or attributable to: (i) the announcement, pendency or completion of the transactions contemplated by the Transaction Documents or (ii) any action required or permitted by the Transaction Documents or any action taken (or omitted to be taken) with the written consent of or at the written request of Purchaser). As to all Company and Subsidiary power, authority and qualification, no Proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification.

3.1.3. **Authorization; Enforcement.** The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by this Agreement and each of the other Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement and each of the other Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and thereby have been duly authorized by all necessary action on the part of the Company and no further action is required by the Company, the Board of Directors or the Company's stockholders in connection herewith or therewith other than in connection with the Required Approvals. This Agreement and each other Transaction Document to which it is a party has been (or upon delivery will have been) duly executed by the Company and, when delivered in accordance with the terms hereof and thereof, will constitute the legal, valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

3.1.4. **No Conflicts.** The execution, delivery and performance by the Company of this Agreement and the other Transaction Documents to which it is a party, the issuance and sale of the Securities and the consummation by it of the transactions contemplated hereby and thereby do not and will not (i) conflict with or violate any provision of the Company's or any Subsidiary's certificate or articles of incorporation, bylaws or other organizational or charter documents, or (ii) conflict with, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, result in the creation of any Lien upon any of the properties or assets of the Company or any Subsidiary, or give to others any rights of termination, amendment, anti-dilution or similar adjustments, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, credit facility, debt or other instrument (evidencing a Company or Subsidiary debt or otherwise) or other understanding to which the Company or any Subsidiary is a party or by which any property or asset of the Company or any Subsidiary is bound or affected, or (iii) subject to the Required Approvals, conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company or a Subsidiary is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company or a Subsidiary is bound or affected; except in the case of each of clauses (ii) and (iii), such as could not have or reasonably be expected to result in a Material Adverse Effect.

3.1.5. **Filings, Consents and Approvals.** The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any court or other federal, state, local or other governmental authority or other Person in connection with the execution, delivery and performance by the Company of the Transaction Documents, other than: (i) the filings required pursuant to Section 4.4 of this Agreement, (ii) the filing with the Commission of the Prospectus Supplement to the Shelf Registration Statement, (iii) the notice and/or application(s) to each applicable Trading Market for the issuance and sale of the Securities and the listing of the Shares and Warrant Shares for trading thereon in the time and manner required thereby and such other filings as are required to be made under applicable state securities laws (the “**Required Approvals**”).

3.2. **Issuance of the Securities; Registration.** The Securities are duly authorized and, when issued and paid for in accordance with the applicable Transaction Documents, will be duly and validly issued, fully paid and nonassessable (which means that no further sums are required to be paid by the holders thereof in connection with the issue thereof), free and clear of all Liens imposed by the Company other than restrictions on transfer provided for in the Transaction Documents and applicable law. The Warrant Shares, when issued in accordance with the terms of the Transaction Documents, will be validly issued, fully paid and nonassessable (which means that no further sums are required to be paid by the holders thereof in connection with the issue thereof), free and clear of all Liens imposed by the Company other than restrictions on transfer provided for in the Transaction Documents and applicable law. As of the date hereof, the Company has reserved and the Company shall continue to reserve and keep available at all times, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue Shares pursuant to this Agreement.

3.2.1. **Registration Statement.** The Company has prepared and filed the Shelf Registration Statement in conformity with the requirements of the Securities Act, which became effective on [], including the Prospectus, and such amendments and supplements thereto as may have been required to the date of this Agreement. The Shelf Registration Statement is effective under the Securities Act and no stop order preventing or suspending the effectiveness of the Shelf Registration Statement or suspending or preventing the use of the Prospectus has been issued by the Commission and no proceedings for that purpose have been instituted or, to the knowledge of the Company, are threatened by the Commission. The Company, if required by the rules and regulations of the Commission, shall file the Prospectus Supplement with the Commission pursuant to Rule 424(b). At the time the Shelf Registration Statement and any amendments thereto became effective, at the date of this Agreement and at the Closing Date, the Shelf Registration Statement and any amendments thereto conformed and will conform in all material respects to the requirements of the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading; and the Prospectus and any amendments or supplements thereto, at the time the Prospectus or any amendment or supplement thereto was issued and at the Closing Date, conformed and will conform in all material respects to the requirements of the Securities Act and did not and will not contain an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The Company was at the time of the filing of the Shelf Registration Statement eligible to use Form S-3. The Company is eligible to use Form S-3 under the Securities Act and it meets the requirements with respect to the aggregate market value of securities being sold pursuant to this offering and during the twelve (12) months prior to this offering, as set forth in General Instruction I.B.6 of Form S-3.

3.2.2. **Capitalization.** The capitalization of the Company as of the date hereof is as set forth on Schedule 3.2.2, which Schedule 3.2.2 shall also include the number of shares of Common Stock owned beneficially, and of record, by Affiliates of the Company as of the date hereof. Other than as stated in Schedule 3.2.2, the Company has not issued any capital stock since its most recently filed periodic report under the Exchange Act, other than pursuant to the exercise of employee stock options under the Company's stock option plans, the issuance of shares of Common Stock to employees pursuant to the Company's employee stock purchase plans and pursuant to the conversion and/or exercise of Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as set forth in Schedule 3.2.2, or pursuant to this Agreement, there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any shares of Common Stock or the capital stock of any Subsidiary, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents or capital stock of any Subsidiary. The issuance and sale of the Securities will not obligate the Company or any Subsidiary to issue shares of Common Stock or other securities to any Person (other than the Purchasers). Except as set forth in Schedule 3.2.2, there are no outstanding securities or instruments of the Company or any Subsidiary with any provision that adjusts the exercise, conversion, exchange or reset price of such security or instrument upon an issuance of securities by the Company or any Subsidiary. Except as set forth in Schedule 3.2.2, there are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. All of the outstanding shares of capital stock of the Company are duly authorized, validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. No further approval or authorization of any stockholder, the Board of Directors or others is required for the issuance and sale of the Securities. There are no stockholders' agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's stockholders.

3.2.3. **SEC Reports; Financial Statements**. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, together with the Prospectus and the Prospectus Supplement, being collectively referred to herein as the “**SEC Reports**”) on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Company has never been an issuer subject to Rule 144(i) under the Securities Act. The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved (“**GAAP**”), except as may be otherwise specified in such financial statements or the notes thereto, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments.

3.2.4. **Material Changes; Undisclosed Events, Liabilities or Developments**. Since the date of the latest audited financial statements included within the SEC Reports, except as set forth on Schedule 3.2.4, (i) there has been no event, occurrence or development that has had or that could reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice and (B) liabilities not required to be reflected in the Company’s financial statements pursuant to GAAP or disclosed in filings made with the Commission, (iii) the Company has not altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its stockholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its capital stock and (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company stock option plans. The Company does not have pending before the Commission any request for confidential treatment of information. Except for the issuance of the Securities contemplated by this Agreement, no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its Subsidiaries or their respective businesses, prospects, properties, operations, assets or financial condition that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made or deemed made that has not been publicly disclosed at least one (1) Trading Day prior to the date that this representation is made.

3.2.5. **Litigation.** Except as set forth in Schedule 3.2.5, there is no action, suit, inquiry, notice of violation, proceeding or investigation pending or, to the knowledge of the Company, threatened against or affecting the Company, any Subsidiary or any of their respective properties before or by any court, arbitrator, governmental or administrative agency or regulatory authority (federal, state, county, local or foreign) (collectively, an “**Action**”). None of the Actions set forth on Schedule 3.2.5, (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or (ii) would, if there were an unfavorable decision, have or reasonably be expected to result in a Material Adverse Effect. Neither the Company nor any Subsidiary, nor any director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal or state securities laws or a claim of breach of fiduciary duty. There has not been, and to the knowledge of the Company, there is not pending or contemplated, any investigation by the Commission involving the Company or any current or former director or officer of the Company, except in the ordinary course of business that would not have a Material Adverse Effect. The Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company or any Subsidiary under the Exchange Act or the Securities Act.

3.2.6. **Labor Relations.** No labor dispute exists or, to the knowledge of the Company, is imminent with respect to any of the employees of the Company, which could reasonably be expected to result in a Material Adverse Effect. None of the Company’s or its Subsidiaries’ employees is a member of a union that relates to such employee’s relationship with the Company or such Subsidiary, and neither the Company nor any of its Subsidiaries is a party to a collective bargaining agreement, and the Company and its Subsidiaries believe that their relationships with their employees are good. To the knowledge of the Company, no executive officer of the Company or any Subsidiary is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant in favor of any third party, and the continued employment of each such executive officer does not subject the Company or any of its Subsidiaries to any liability with respect to any of the foregoing matters. The Company and its Subsidiaries are in compliance with all U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

3.2.7. **Compliance.** Neither the Company nor any Subsidiary: (i) is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary received notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or violation has been waived), (ii) is in violation of any judgment, decree, or order of any court, arbitrator or other governmental authority or (iii) is or has been in violation of any statute, rule, ordinance or regulation of any governmental authority, including without limitation all foreign, federal, state and local laws relating to taxes, environmental protection, occupational health and safety, product quality and safety and employment and labor matters, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

3.2.8. **Environmental Laws**. The Company and its Subsidiaries (i) are in compliance with all federal, state, local and foreign laws relating to pollution or protection of human health or the environment (including ambient air, surface water, groundwater, land surface or subsurface strata), including laws relating to emissions, discharges, releases or threatened releases of chemicals, pollutants, contaminants, or toxic or hazardous substances or wastes (collectively, "**Hazardous Materials**") into the environment, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials, as well as all authorizations, codes, decrees, demands, or demand letters, injunctions, judgments, licenses, notices or notice letters, orders, permits, plans or regulations, issued, entered, promulgated or approved thereunder ("**Environmental Laws**"); (ii) have received all permits licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses; and (iii) are in compliance with all terms and conditions of any such permit, license or approval where in each clause (i), (ii) and (iii), the failure to so comply could be reasonably expected to have, individually or in the aggregate, a Material Adverse Effect.

3.2.9. **Regulatory Permits**. The Company and the Subsidiaries possess all certificates, authorizations and permits issued by the appropriate federal, state, local or foreign regulatory authorities necessary to conduct their respective businesses as described in the SEC Reports, except where the failure to possess such permits could not reasonably be expected to result in a Material Adverse Effect ("**Material Permits**"), and neither the Company nor any Subsidiary has received any notice of proceedings relating to the revocation or modification of any Material Permit.

3.2.10. **Title to Assets**. The Company and the Subsidiaries have good and marketable title in fee simple to, or have valid and marketable rights to lease or otherwise use, all real property and all personal property that is material to the business of the Company and the Subsidiaries, in each case free and clear of all Liens, except for (i) Liens that do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries and (ii) Liens for the payment of federal, state or other taxes, for which appropriate reserves have been made in accordance with GAAP, and the payment of which is neither delinquent nor subject to penalties. Neither the Company nor any of its Subsidiaries has received any written notice of any claim of any sort that has been asserted by anyone adverse to the rights of the Company or its Subsidiaries under any of the leases or subleases or licenses or with respect to the properties mentioned above, or affecting or questioning the rights of the Company or any Subsidiary to the continued possession or use of the leased or subleased or licensed premises or the properties mentioned above, other than such claims which would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

3.2.11. **Intellectual Property.** The Company and the Subsidiaries have, or have rights to use, all patents, patent applications, trademarks, trademark applications, service marks, trade names, trade secrets, inventions, copyrights, licenses and other intellectual property rights and similar rights necessary or required for use in connection with their respective businesses as described in the SEC Reports and which the failure to so have could have a Material Adverse Effect (collectively, the “**Intellectual Property Rights**”). None of, and neither the Company nor any Subsidiary has received notice (written or otherwise) that any of, the Intellectual Property Rights has expired, terminated or been abandoned, or is expected to expire or terminate or be abandoned, within two (2) years after the date of this Agreement. Neither the Company nor any Subsidiary has received, since the date of the latest audited financial statements included within the SEC Reports, a written notice of a claim or otherwise has any knowledge that the Intellectual Property Rights violate or infringe upon the rights of any Person, except as could not have or reasonably be expected to not have a Material Adverse Effect. To the knowledge of the Company, all such Intellectual Property Rights are enforceable and there is no existing infringement by another Person of any of the Intellectual Property Rights. The Company and its Subsidiaries have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their intellectual properties, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

3.2.12. **Insurance.** The Company and the Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are prudent and customary in the businesses in which the Company and the Subsidiaries are engaged, including, but not limited to, directors and officers insurance coverage in amount deemed prudent by the Company. Neither the Company nor any Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business without a significant increase in cost.

3.2.13. **Transactions with Affiliates and Employees.** Except as set forth on Schedule 3.2.13, during the past three fiscal years and the subsequent interim period through the date of this Agreement, none of the officers or directors of the Company or any Subsidiary and, to the knowledge of the Company, none of the employees of the Company or any Subsidiary is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, providing for the borrowing of money from or lending of money to or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee, stockholder, member or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock option agreements under any stock option plan of the Company.

3.2.14. **Sarbanes-Oxley; Internal Accounting Controls.** The Company and the Subsidiaries are in material compliance with any and all applicable requirements of the Sarbanes-Oxley Act of 2002, as amended, that are effective as of the date hereof, and any and all applicable rules and regulations promulgated by the Commission thereunder that are effective as of the date hereof and as of the Closing Date. Except as set forth on Schedule 3.2.14, the Company and the Subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurance that: (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company and the Subsidiaries have established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the Company and the Subsidiaries and designed such disclosure controls and procedures to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms. The Company's certifying officers have evaluated the effectiveness of the disclosure controls and procedures of the Company and the Subsidiaries as of the end of the period covered by the most recently filed periodic report under the Exchange Act (such date, the "**Evaluation Date**"). The Company presented in its most recently filed periodic report under the Exchange Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no changes in the internal control over financial reporting (as such term is defined in the Exchange Act) of the Company and its Subsidiaries that have materially affected, or is reasonably likely to materially affect, the internal control over financial reporting of the Company and its Subsidiaries.

3.2.15. **Certain Fees.** Except for the fees and expenses of the Placement Agent, no brokerage or finder's fees or commissions are or will be payable by the Company or any Subsidiary to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. The Purchasers shall have no obligation with respect to any fees or with respect to any claims made by or on behalf of other Persons for fees of a type contemplated in this Section 3.2.15 that may be due in connection with the transactions contemplated by the Transaction Documents.

3.2.16. **Investment Company.** The Company is not, and is not an Affiliate of, and immediately after receipt of payment for the Securities, will not be or be an Affiliate of, an "investment company" within the meaning of the Investment Company Act of 1940, as amended. The Company shall conduct its business in a manner so that it will not become an "investment company" subject to registration under the Investment Company Act of 1940, as amended.

3.2.17. **Registration Rights**. Except as disclosed on Schedule 3.2.17, no Person has any right to cause the Company or any Subsidiary to effect the registration under the Securities Act of any securities of the Company or any Subsidiary.

3.2.18. **Listing and Maintenance Requirements**. The Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the Commission is contemplating terminating such registration. Except as disclosed in the SEC Reports, the Company has not, in the 12 months preceding the date hereof, received notice from any Trading Market on which the Common Stock is or has been listed or quoted to the effect that the Company is not in compliance with the listing or maintenance requirements of such Trading Market. The Common Stock is currently eligible for electronic transfer through the Depository Trust Company or another established clearing corporation and the Company is current in payment of the fees to the Depository Trust Company (or such other established clearing corporation) in connection with such electronic transfer.

3.2.19. **Application of Takeover Protections**. The Company and the Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company's certificate of incorporation (or similar charter documents) or the laws of its state of incorporation that is or could become applicable to the Purchasers as a result of the Purchasers and the Company fulfilling their obligations or exercising their rights under the Transaction Documents, including without limitation as a result of the Company's issuance of the Securities and the Purchasers' ownership of the Securities.

3.2.20. **Disclosure**. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, the Company confirms that neither it nor any other Person acting on its behalf has provided any of the Purchasers or their agents or counsel with any information that it believes constitutes or might constitute material, non-public information. The Company understands and confirms that the Purchasers will rely on the foregoing representation in effecting transactions in securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Purchasers regarding the Company and its Subsidiaries, their respective businesses and the transactions contemplated hereby, is true and correct and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading. The press releases disseminated by the Company during the twelve months preceding the date of this Agreement taken as a whole do not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made and when made, not misleading. The Company acknowledges and agrees that no Purchaser makes or has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3.3 hereof.

3.2.21. **No Integrated Offering.** Assuming the accuracy of the Purchasers' representations and warranties set forth in Section 3.3, neither the Company, nor any of its Affiliates, nor any Person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause this offering of the Securities to be integrated with prior offerings by the Company for purposes of any applicable stockholder approval provisions of any Trading Market on which any of the securities of the Company are listed or designated.

3.2.22. **Solvency.** Based on the consolidated financial condition of the Company as of the Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder, (i) the fair saleable value of the Company's assets exceeds the amount that will be required to be paid on or in respect of the Company's existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company's assets do not constitute unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). The Company has no knowledge of any facts or circumstances which lead it to believe that it will file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within one year after the Closing Date. Schedule 3.2.22 sets forth as of the date hereof all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments. For the purposes of this Agreement, "**Indebtedness**" means (x) any liabilities for borrowed money or amounts owed in excess of \$50,000 (other than trade accounts payable incurred in the ordinary course of business), (y) all guaranties, endorsements and other contingent obligations in respect of indebtedness of others, whether or not the same are or should be reflected in the Company's consolidated balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (z) the present value of any lease payments in excess of \$50,000 due under leases required to be capitalized in accordance with GAAP. Neither the Company nor any Subsidiary is in default with respect to any Indebtedness.

3.2.23. **Tax Status.** Except as disclosed in Schedule 3.2.23, the Company and its Subsidiaries each (i) has made or filed all material United States federal, state and local income and all foreign income and franchise tax returns, reports and declarations required by any jurisdiction to which it is subject, (ii) has paid all material taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations and (iii) has set aside on its books provision reasonably adequate for the payment of all material taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company or of any Subsidiary know of no basis for any such claim.

3.2.24. **Foreign Corrupt Practices Act.** Neither the Company nor any Subsidiary, nor to the knowledge of the Company or any Subsidiary, any agent or other person acting on behalf of the Company or any Subsidiary, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company or any Subsidiary (or made by any person acting on its behalf of which the Company is aware) which is in violation of law or (iv) violated in any material respect any provision of FCPA.

3.2.25. **Accountants.** The Company's accounting firm is Weinberg & Company, P.A., with offices at 1925 Century Park East, Suite 1120 Los Angeles, CA 90067. To the knowledge and belief of the Company, such accounting firm (i) is a registered public accounting firm as required by the Exchange Act and (ii) shall express its opinion with respect to the financial statements to be included in the Company's Annual Report for the now current fiscal year.

3.2.26. **No Disagreements with Accountants and Lawyers.** There are no disagreements of any kind presently existing, or reasonably anticipated by the Company to arise, between the Company and the accountants and lawyers formerly or presently employed by the Company and the Company is current with respect to any fees owed to its accountants and lawyers which could affect the Company's ability to perform any of its obligations under any of the Transaction Documents.

3.2.27. **Acknowledgment Regarding Purchasers' Purchase of Securities.** The Company acknowledges and agrees that each of the Purchasers is acting solely in the capacity of an arm's length purchaser with respect to the Transaction Documents and the transactions contemplated thereby. The Company further acknowledges that no Purchaser is acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated thereby and any advice given by any Purchaser or any of their respective representatives or agents in connection with the Transaction Documents and the transactions contemplated thereby is merely incidental to the Purchasers' purchase of the Securities. The Company further represents to each Purchaser that the Company's decision to enter into this Agreement and the other Transaction Documents has been based solely on the independent evaluation of the transactions contemplated hereby by the Company and its representatives.

3.2.28. **Acknowledgment Regarding Purchaser's Trading Activity.** Notwithstanding anything in this Agreement or elsewhere herein to the contrary (except for Sections 3.3.6 and 4.12 hereof), it is understood and acknowledged by the Company that: (i) none of the Purchasers has been asked by the Company to agree, nor has any Purchaser agreed, to desist from purchasing or selling, long and/or short, securities of the Company, or "derivative" securities based on securities issued by the Company or to hold the Securities for any specified term, (ii) past or future open market or other transactions by any Purchaser, specifically including, without limitation, Short Sales or "derivative" transactions, before or after the closing of this or future private placement transactions, may negatively impact the market price of the Company's publicly-traded securities, (iii) any Purchaser, and counter-parties in "derivative" transactions to which any such Purchaser is a party, directly or indirectly, presently may have a "short" position in the Common Stock and (iv) each Purchaser shall not be deemed to have any affiliation with or control over any arm's length counter-party in any "derivative" transaction. The Company further understands and acknowledges that (y) one or more Purchasers may engage in hedging activities at various times during the period that the Securities are outstanding, including, without limitation, during the periods that the value of the Warrant Shares deliverable with respect to Securities are being determined, and (z) such hedging activities (if any) could reduce the value of the existing stockholders' equity interests in the Company at and after the time that the hedging activities are being conducted. The Company acknowledges that such aforementioned hedging activities do not constitute a breach of any of the Transaction Documents.

3.2.29. **Regulation M Compliance.** The Company has not, and to its knowledge no one acting on its behalf has, (i) taken, directly or indirectly, any action designed to cause or to result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any of the Securities, (ii) sold, bid for, purchased, or paid any compensation for soliciting purchases of, any of the Securities, or (iii) paid or agreed to pay to any Person any compensation for soliciting another to purchase any other securities of the Company, other than, in the case of clauses (ii) and (iii), compensation paid to the Company's placement agent in connection with the placement of the Securities.

3.2.30. **Officers' Certificate.** Any certificate signed by any duly authorized officer of the Company and delivered to the Purchasers shall be deemed a representation and warranty by the Company to the Purchasers as to the matters covered thereby.

3.2.31. **D&O Questionnaires.** To the Company's knowledge, all information contained in the questionnaires most recently completed by each of the Company's directors and officers and beneficial owner of 5% or more of the shares of Common Stock or Common Stock Equivalents is true and correct in all respects and the Company has not become aware of any information which would cause the information disclosed in such questionnaires become inaccurate and incorrect.

3.2.32. **Stock Option Plans.** Each stock option granted by the Company under the Company's stock option plan, if any, was granted (i) in accordance with the terms of the Company's stock option plan and (ii) with an exercise price at least equal to the fair market value of the Common Stock on the date such stock option would be considered granted under GAAP and applicable law. No stock option granted under the Company's stock option plan has been backdated. The Company has not knowingly granted, and there is no and has been no Company policy or practice to knowingly grant, stock options prior to, or otherwise knowingly coordinate the grant of stock options with, the release or other public announcement of material information regarding the Company or its Subsidiaries or their financial results or prospects.

3.2.33. **Office of Foreign Assets Control**. Neither the Company nor any Subsidiary nor, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company or any Subsidiary is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department ("**OFAC**").

3.2.34. **U.S. Real Property Holding Corporation**. The Company is not and has never been a U.S. real property holding corporation within the meaning of Section 897 of the Internal Revenue Code of 1986, as amended, and the Company shall so certify upon Purchaser's request.

3.2.35. **Bank Holding Company Act**. Neither the Company nor any of its Subsidiaries or Affiliates is subject to the Bank Holding Company Act of 1956, as amended (the "**BHCA**") and to regulation by the Board of Governors of the Federal Reserve System (the "**Federal Reserve**"). Neither the Company nor any of its Subsidiaries or Affiliates owns or controls, directly or indirectly, five percent (5%) or more of the outstanding shares of any class of voting securities or twenty-five percent (25%) or more of the total equity of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve. Neither the Company nor any of its Subsidiaries or Affiliates exercises a controlling influence over the management or policies of a bank or any entity that is subject to the BHCA and to regulation by the Federal Reserve.

3.2.36. **Money Laundering**. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record-keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, applicable money laundering statutes and applicable rules and regulations thereunder (collectively, the "**Money Laundering Laws**"), and no Action or Proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company or any Subsidiary, threatened.

3.2.37. **Other Covered Persons**. Other than the Placement Agent, the Company is not aware of any person that has been or will be paid (directly or indirectly) remuneration for solicitation of purchasers in connection with the sale of any Securities.

3.2.38. **FDA.** As to each product subject to the jurisdiction of the U.S. Food and Drug Administration (“**FDA**”) under the Federal Food, Drug and Cosmetic Act, as amended, and the regulations thereunder (“**FDCA**”) that is manufactured, packaged, labeled, tested, distributed, sold, and/or marketed by the Company or any of its Subsidiaries (each such product, a “**Pharmaceutical Product**”), such Pharmaceutical Product is being manufactured, packaged, labeled, tested, distributed, sold and/or marketed by the Company in compliance with all applicable requirements under FDCA and similar laws, rules and regulations relating to registration, investigational use, premarket clearance, licensure, or application approval, good manufacturing practices, good laboratory practices, good clinical practices, product listing, quotas, labeling, advertising, record keeping and filing of reports, except where the failure to be in compliance would not have a Material Adverse Effect. There is no pending, completed or, to the Company’s knowledge, threatened, action (including any lawsuit, arbitration, or legal or administrative or regulatory proceeding, charge, complaint, or investigation) against the Company or any of its Subsidiaries, and none of the Company or any of its Subsidiaries has received any notice, warning letter or other communication from the FDA or any other governmental entity, which (i) contests the premarket clearance, licensure, registration, or approval of, the uses of, the distribution of, the manufacturing or packaging of, the testing of, the sale of, or the labeling and promotion of any Pharmaceutical Product, (ii) withdraws its approval of, requests the recall, suspension, or seizure of, or withdraws or orders the withdrawal of advertising or sales promotional materials relating to, any Pharmaceutical Product, (iii) imposes a clinical hold on any clinical investigation by the Company or any of its Subsidiaries, (iv) enjoins production at any facility of the Company or any of its Subsidiaries, (v) enters or proposes to enter into a consent decree of permanent injunction with the Company or any of its Subsidiaries, or (vi) otherwise alleges any violation of any laws, rules or regulations by the Company or any of its Subsidiaries, and which, either individually or in the aggregate, would have a Material Adverse Effect. The properties, business and operations of the Company have been and are being conducted in all material respects in accordance with all applicable laws, rules and regulations of the FDA. The Company has not been informed by the FDA that the FDA will prohibit the marketing, sale, license or use in the United States of any product proposed to be developed, produced or marketed by the Company nor has the FDA expressed any concern as to approving or clearing for marketing any product being developed or proposed to be developed by the Company.

3.2.39. **Cybersecurity.** (i) (a) There has been no security breach or other compromise of or relating to any of the Company’s or any Subsidiary’s information technology and computer systems, networks, hardware, software, data (including the data of its respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of it), equipment or technology (collectively, “**IT Systems and Data**”) and (b) the Company and the Subsidiaries have not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any security breach or other compromise to its IT Systems and Data; (ii) the Company and the Subsidiaries are presently in compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except, in the case of clauses (i) and (ii) herein, as would not, individually or in the aggregate, have a Material Adverse Effect; (iii) the Company and the Subsidiaries have implemented and maintained commercially reasonable safeguards to maintain and protect its material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and Data; and (iv) the Company and the Subsidiaries have implemented backup and disaster recovery technology consistent with industry standards and practices.

3.2.40. **Separate and Independent Purchasers.** The Company further (a) represents and warrants and acknowledges and agrees that, to the knowledge of the Company (i) each Purchaser is participating in the offering of Securities contemplated hereby separately and independently of each other Purchaser, (ii) no Purchaser has communicated directly with any other Purchaser, (iii) all communications by each Purchaser concerning the Transaction Documents and the transactions contemplated thereby and any matters related thereto were solely conducted separately and independently with the Placement Agent without the involvement or inclusion of any other Purchaser and (iv) the Purchasers do not constitute a “group” as that term is used under Section 13(d) of the Exchange Act, and (b) covenants and agrees not to take a position to the contrary to the foregoing.

3.3. **Representations and Warranties of the Purchasers**. Each Purchaser, for itself and for no other Purchaser, hereby represents and warrants as of the date hereof and as of the Closing Date to the Company as follows (unless as of a specific date therein, in which case they shall be accurate as of such date):

3.3.1. **Organization; Authority**. Such Purchaser is either an individual or an entity duly incorporated or formed, validly existing and in good standing under the law of the jurisdiction of its incorporation or formation with full right, corporate, partnership, limited liability company or similar power and authority to enter into and to consummate the transactions contemplated by the Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of the Transaction Documents and performance by such Purchaser of the transactions contemplated by the Transaction Documents have been duly authorized by all necessary corporate, partnership, limited liability company or similar action, as applicable, on the part of such Purchaser. Each Transaction Document to which it is a party has been duly executed by such Purchaser, and when delivered by such Purchaser in accordance with the terms hereof, will constitute the legal, valid and binding obligation of such Purchaser, enforceable against it in accordance with its terms, except (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

3.3.2. **Own Account**. Such Purchaser is acquiring the Securities as principal for its own account and has no present intention of distributing any of such Securities (this representation and warranty shall not limit such Purchaser's right to sell the Securities pursuant to a registration statement or otherwise in compliance with applicable federal and state securities laws). Such Purchaser is acquiring the Securities hereunder in the ordinary course of its business.

3.3.3. **Purchaser Status**. At the time such Purchaser was offered the Securities, it was, and as of the date hereof it is, and on each date on which it exercises any Warrants, it will be either: (i) an "accredited investor" as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7), (a)(8), (a)(9), (a)(12), or (a)(13) under the Securities Act or (ii) a "qualified institutional buyer" as defined in Rule 144A(a)(1) under the Securities Act. Such Purchaser hereby represents that neither such Purchaser nor any of its Rule 506(d) Related Parties (as defined below) is a "bad actor" within the meaning of Rule 506(d) promulgated under the Securities Act. For purposes of this Agreement, "Rule 506(d) Related Party" shall mean a person or entity covered by the "Bad Actor disqualification" provision of Rule 506(d) of the Securities Act.

3.3.4. **Experience of Such Purchaser.** Such Purchaser, either alone or together with its representatives, has such knowledge, sophistication and experience in business and financial matters so as to be capable of evaluating the merits and risks of the prospective investment in the Securities, and has so evaluated the merits and risks of such investment. Such Purchaser is able to bear the economic risk of an investment in the Securities and, at the present time, is able to afford a complete loss of such investment.

3.3.5. **Access to Information.** Such Purchaser acknowledges that it has had the opportunity to review the Transaction Documents (including all exhibits and schedules thereto) and the SEC Reports and has been afforded (i) the opportunity to ask such questions as it has deemed necessary of, and to receive answers from, representatives of the Company concerning the terms and conditions of the offering of the Securities and the merits and risks of investing in the Securities; (ii) access to information about the Company and its financial condition, results of operations, business, properties, management and prospects sufficient to enable it to evaluate its investment; and (iii) the opportunity to obtain such additional information that the Company possesses or can acquire without unreasonable effort or expense that is necessary to make an informed investment decision with respect to the investment. Such Purchaser acknowledges and agrees that neither the Placement Agent nor any Affiliate of the Placement Agent has provided such Purchaser with any information or advice with respect to the Securities nor is such information or advice necessary or desired. Neither the Placement Agent nor any Affiliate has made or makes any representation as to the Company or the quality of the Securities and the Placement Agent and any Affiliate may have acquired non-public information with respect to the Company which such Purchaser agrees need not be and has not been provided to it (other than with respect to the transactions contemplated by the Transaction Documents). In connection with the issuance of the Securities to such Purchaser, neither the Placement Agent nor any of its Affiliates has acted as a financial advisor or fiduciary to such Purchaser.

3.3.6. **Certain Transactions and Confidentiality.** Other than consummating the transactions contemplated hereunder, such Purchaser has not, nor has any Person acting on behalf of or pursuant to any understanding with such Purchaser, directly or indirectly executed any purchases or sales, including Short Sales, of the securities of the Company during the period commencing as of the time that such Purchaser first received a term sheet (written or oral) from the Company or any other Person representing the Company setting forth the material terms of the transactions contemplated hereunder and ending immediately prior to the execution hereof. Notwithstanding the foregoing, in the case of a Purchaser that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's assets, the representation set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement. Other than to other Persons party to this Agreement or to such Purchaser's representatives, including, without limitation, its officers, directors, partners, legal and other advisors, employees, agents and Affiliates, such Purchaser has maintained the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction). Notwithstanding the foregoing, for the avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to locating or borrowing shares in order to effect Short Sales or similar transactions in the future.

3.3.7. **No Intent to Effect a Change of Control.** Such Purchaser has no present intent to effect a “change of control” of the Company as such term is interpreted and understood under the rules promulgated pursuant to Section 13(d) of the 1934 Act.

The Company acknowledges and agrees that the representations contained in this Section 3.3 shall not modify, amend or affect such Purchaser’s right to rely on the Company’s representations and warranties contained in this Agreement or any representations and warranties contained in any other Transaction Document or any other document or instrument executed and/or delivered in connection with this Agreement or the consummation of the transactions contemplated hereby. Notwithstanding the foregoing, for the avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to locating or borrowing shares in order to effect Short Sales or similar transactions in the future.

4. **Other Agreements of the Parties.**

4.1. **Warrant Shares.** If all or any portion of a Warrant is exercised at a time when there is an effective registration statement to cover the issuance or resale of the Warrant Shares or if the Warrant is exercised via cashless exercise, the Warrant Shares issued pursuant to any such exercise shall be issued free of all legends. If at any time following the date hereof the Shelf Registration Statement (or any subsequent registration statement registering the sale or resale of the Warrant Shares) is not effective or is not otherwise available for the sale or resale of the Warrant Shares, the Company shall immediately notify the holders of the Warrants in writing that such registration statement is not then effective and thereafter shall promptly notify such holders when the registration statement is effective again and available for the sale or resale of the Warrant Shares (it being understood and agreed that the foregoing shall not limit the ability of the Company to issue, or any Purchaser to sell, any of the Warrant Shares in compliance with applicable federal and state securities laws). The Company shall use best efforts to keep a registration statement (including the Shelf Registration Statement) registering the issuance or resale of the Warrant Shares effective during the term of the Warrants.

4.2. **Furnishing of Information.** Until no Purchaser owns any Securities, the Company covenants to maintain the effectiveness of the registration of the Common Stock under Section 12(b) or 12(g) of the Exchange Act and to use reasonable best efforts to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to the Exchange Act even if the Company is not then subject to the reporting requirements of the Exchange Act.

4.3. **Integration.** The Company shall not sell, offer for sale or solicit offers to buy or otherwise negotiate in respect of any security (as defined in Section 2 of the Securities Act) that would be integrated with the offer or sale of the Securities for purposes of the rules and regulations of any Trading Market such that it would require stockholder approval prior to the closing of such other transaction unless stockholder approval is obtained before the closing of such subsequent transaction.

4.4. **Securities Laws Disclosure; Publicity.** The Company shall (a) by the Disclosure Time, issue a press release disclosing the material terms of the transactions contemplated hereby, and (b) file, within the time required by the Exchange Act, a Current Report on Form 8-K, including the Transaction Documents as exhibits thereto, with the Commission. From and after the issuance of such press release, the Company represents to the Purchasers that it shall have publicly disclosed all material, non-public information delivered to any of the Purchasers by the Company or any of its Subsidiaries, or any of their respective officers, directors, employees or agents (including, without limitation, the Placement Agent). In addition, effective upon the issuance of such press release, the Company acknowledges and agrees that any and all confidentiality or similar obligations under any agreement, whether written or oral, between the Company, any of its Subsidiaries, or any of their respective officers, directors, agents (including, without limitation, the Placement Agent), employees or Affiliates on the one hand, and any of the Purchasers or any of their Affiliates on the other hand, shall terminate and be of no further force or effect. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company. The Company and each Purchaser shall consult with each other in issuing any other press releases with respect to the transactions contemplated hereby, and neither the Company nor any Purchaser shall issue any such press release nor otherwise make any such public statement without the prior consent of the Company, with respect to any press release of any Purchaser, or without the prior consent of each Purchaser, with respect to any press release of the Company, which consent shall not unreasonably be withheld or delayed, except if such disclosure is required by law, in which case the disclosing party shall promptly provide the other party with prior notice of such public statement or communication. Notwithstanding the foregoing, the Company shall not publicly disclose the name of any Purchaser, or include the name of any Purchaser in any filing with the Commission or any regulatory agency or Trading Market, without the prior written consent of such Purchaser, except (a) to the extent required by federal securities law in connection with the filing of final Transaction Documents with the Commission and (b) to the extent such disclosure is required by law or Trading Market regulations, in which such cases the Company shall (x) obtain prior advice of competent counsel that such disclosure is required, (y) provide the Purchasers with prior notice of such disclosure permitted under this Section 4.4 and (z) reasonably cooperate with such Purchasers regarding such disclosure.

4.5. **Stockholder Rights Plan**. No claim will be made or enforced by the Company or, with the consent of the Company, any other Person, that any Purchaser is an “**Acquiring Person**” under any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or similar anti-takeover plan or arrangement in effect or hereafter adopted by the Company, or that any Purchaser could be deemed to trigger the provisions of any such plan or arrangement, by virtue of receiving Securities under the Transaction Documents or under any other agreement between the Company and the Purchasers.

4.6. **Non-Public Information**. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, which shall be disclosed pursuant to Section 4.4, the Company covenants and agrees that neither it, nor any other Person acting on its behalf will provide any Purchaser or its agents or counsel with any information that constitutes, or the Company reasonably believes constitutes, material non-public information, unless prior thereto such Purchaser shall have consented in writing to the receipt of such information and agreed in writing with the Company to keep such information confidential. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company. To the extent that the Company, any of its Subsidiaries, or any of their respective officers, directors, agents, employees or Affiliates delivers any material, non-public information to a Purchaser without such Purchaser’s consent, the Company hereby covenants and agrees that such Purchaser shall not have any duty of confidentiality to the Company, any of its Subsidiaries, or any of their respective officers, directors, agents, employees or Affiliates, or a duty to the Company, any of its Subsidiaries or any of their respective officers, directors, agents, employees or Affiliates not to trade on the basis of, such material, non-public information, provided that the Purchaser shall remain subject to applicable law. To the extent that any notice provided pursuant to any Transaction Document constitutes, or contains, material, non-public information regarding the Company or any Subsidiaries, the Company shall simultaneously with the delivery of such notice file such notice with the Commission pursuant to a Current Report on Form 8-K. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company.

4.7. **Use of Proceeds**. The Company shall use the net proceeds from the sale of the Securities hereunder for general corporate purposes (which for the avoidance of doubt may include acquisitions, in the Company’s discretion), including working capital. The Company shall not use such proceeds: (a) for the satisfaction of any portion of the Company’s debt (other than payment of trade payables in the ordinary course of the Company’s business and prior practices), (b) for the redemption of any shares of Common Stock or Common Stock Equivalents, (c) for the settlement of any outstanding litigation or (d) in violation of FCPA or OFAC regulations.

4.8. **Indemnification of each Purchaser.** Subject to the provisions of this Section 4.8, the Company will indemnify and hold each Purchaser and its directors, officers, shareholders, members, partners, employees and agents (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title), each Person who controls such Purchaser (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, shareholders, agents, members, partners or employees (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title) of such controlling persons (each, a “**Purchaser Party**.”) harmless from any and all losses, liabilities, obligations, claims, contingencies, damages, costs and expenses, including all judgments, amounts paid in settlements, court costs and reasonable attorneys’ fees and costs of investigation that any such Purchaser Party may suffer or incur as a result of or relating to (a) any breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents, (b) any action instituted against the Purchaser Parties in any capacity (including a Purchaser Party’s status as an investor), or any of them or their respective Affiliates, by the Company or any stockholder of the Company who is not an Affiliate of such Purchaser Party, arising out of or relating to any of the transactions contemplated by the Transaction Documents. For the avoidance of doubt, the indemnification provided herein is intended to, and shall also cover, direct claims brought by the Company against the Purchaser Parties; provided, however, that such indemnification shall not cover any loss, claim, damage or liability to the extent it is finally judicially determined to be attributable to such Purchaser Party’s material breach of any of the representations, warranties or covenants made by such Purchaser Party in any Transaction Document or any conduct by such Purchaser Party which is finally judicially determined to constitute fraud, gross negligence or willful misconduct). If any action shall be brought against any Purchaser Party in respect of which indemnity may be sought pursuant to this Agreement, such Purchaser Party shall promptly notify the Company in writing, and, except with respect to direct claims brought by the Company, the Company shall have the right to assume the defense thereof with counsel of its own choosing reasonably acceptable to the Purchaser Party. Any Purchaser Party shall have the right to employ separate counsel in any such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Purchaser Party except to the extent that (i) the employment thereof has been specifically authorized by the Company in writing, (ii) the Company has failed after a reasonable period of time to assume such defense and to employ counsel or (iii) in such action there is, in the reasonable opinion of counsel to the applicable Purchaser Party (which may be internal counsel), a material conflict on any material issue between the position of the Company and the position of such Purchaser Party, in which case the Company shall be responsible for the reasonable fees and expenses of no more than one such separate counsel. The Company will not be liable to any Purchaser Party under this Agreement for any settlement by a Purchaser Party effected without the Company’s prior written consent, which shall not be unreasonably withheld or delayed. In addition, if any Purchaser Party takes actions to collect amounts due under any Transaction Documents or to enforce the provisions of any Transaction Documents, then the Company shall pay the costs incurred by such Purchaser Party for such collection, enforcement or action, including, but not limited to, attorneys’ fees and disbursements. The indemnification and other payment obligations required by this Section 4.8 shall be made by periodic payments of the amount thereof during the course of the investigation, defense, collection, enforcement or action, as and when bills are received or are incurred; provided, however, that if any Purchaser Party is finally judicially determined not to be entitled to indemnification or payment under this Section 4.8, such Purchaser Party shall promptly reimburse the Company for any payments that are advanced under this sentence. The indemnity agreements contained herein shall be in addition to any cause of action or similar right of any Purchaser Party against the Company or others and any liabilities the Company may be subject to pursuant to law.

4.9. **Listing of Common Stock.** The Company hereby agrees to use its best efforts to maintain the listing or quotation of the Common Stock on the Trading Market on which it is currently listed, and concurrently with the Closing, the Company shall apply to list or quote all of the Shares and Warrant Shares on such Trading Market and promptly secure the listing of all of the Shares and Warrant Shares on such Trading Market. The Company further agrees, if the Company applies to have the Common Stock traded on any other Trading Market, it will then include in such application all of the Shares and Warrant Shares, and will take such other action as is necessary to cause all of the Shares and Warrant Shares to be listed or quoted on such other Trading Market as promptly as possible. The Company will then take all action reasonably necessary to continue the listing and trading of its Common Stock on a Trading Market and will comply in all respects with the Company's reporting, filing and other obligations under the bylaws or rules of the Trading Market. The Company agrees to maintain the eligibility of the Common Stock for electronic transfer through the Depository Trust Company or another established clearing corporation, including, without limitation, by timely payment of fees to the Depository Trust Company or such other established clearing corporation in connection with such electronic transfer.

4.10. **Certain Transactions and Confidentiality.** Each Purchaser, severally and not jointly with the other Purchasers, covenants that neither it, nor any Affiliate acting on its behalf or pursuant to any understanding with it will execute any purchases or sales, including Short Sales, of any of the Company's securities during the period commencing with the execution of this Agreement and ending at such time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4. Each Purchaser, severally and not jointly with the other Purchasers, covenants that until such time as the transactions contemplated by this Agreement are publicly disclosed by the Company pursuant to the initial press release as described in Section 4.4, such Purchaser will maintain the confidentiality of the existence and terms of this transaction. Notwithstanding the foregoing and notwithstanding anything contained in this Agreement to the contrary, the Company expressly acknowledges and agrees that (i) no Purchaser makes any representation, warranty or covenant hereby that it will not engage in effecting transactions in any securities of the Company after the time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4, (ii) no Purchaser shall be restricted or prohibited from effecting any transactions in any securities of the Company in accordance with applicable securities laws from and after the time that the transactions contemplated by this Agreement are first publicly announced pursuant to the initial press release as described in Section 4.4 and (iii) no Purchaser shall have any duty of confidentiality or duty not to trade in the securities of the Company to the Company, any of its Subsidiaries, or any of their respective officers, directors, employees, agents or Affiliates after the issuance of the initial press release as described in Section 4.4. Notwithstanding the foregoing, in the case of a Purchaser that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's assets, the covenant set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement.

4.11. [Reserved]

4.12. **Acknowledgment of Dilution.** The Company acknowledges that the issuance of the Securities may result in dilution of the outstanding shares of Common Stock, which dilution may be substantial under certain market conditions. The Company further acknowledges that its obligations under the Transaction Documents, including, without limitation, its obligation to issue the Shares and Warrant Shares pursuant to the Transaction Documents, are unconditional and absolute and not subject to any right of set off, counterclaim, delay or reduction, regardless of the effect of any such dilution or any claim the Company may have against any Purchaser and regardless of the dilutive effect that such issuance may have on the ownership of the other stockholders of the Company.

4.13. **QEF Election.** If a Purchaser so requests in writing for any taxable year of the Company, the Company, after consulting with its outside accounting firm, shall within fifteen (15) Business Days notify such Purchaser in writing that either (A) neither the Company nor any of its Subsidiaries was a “passive foreign investment company” as defined in Section 1297 of the Code (“**PFIC**”) for such year, or (B) the Company and/or one or more of its Subsidiaries was a PFIC for such year, in which event the Company shall provide to such Purchaser, upon the reasonable written request of such Purchaser, the information reasonably necessary to allow such Purchaser to elect to treat each of the Company and any applicable Subsidiaries (if any), respectively, as a “qualified electing fund” (within the meaning of Section 1295 of the Code for such year, including a “PFIC Annual Information Statement” as described in Treasury Regulation Section 1.1295-1(g)(1) (or any successor Treasury Regulation).

4.14. **Reservation of Common Stock.** As of the date hereof, the Company has reserved and the Company shall continue to reserve and keep available at all times, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue Shares pursuant to this Agreement and the maximum number of Warrant Shares pursuant to any exercise of the Warrants.

4.15. **Exercise Procedures.** The form of Notice of Exercise included in the Warrants set forth the totality of the procedures required of the Purchasers in order to exercise the Warrants. No additional legal opinion, other information or instructions shall be required of the Purchasers to exercise their Warrants. Without limiting the preceding sentences, no ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise form be required in order to exercise the Warrants. The Company shall honor exercises of the Warrants and shall deliver Warrant Shares in accordance with the terms, conditions and time periods set forth in the Transaction Documents.

5. **Miscellaneous.**

5.1. **Termination.** This Agreement may be terminated by any Purchaser, as to such Purchaser’s obligations hereunder only and without any effect whatsoever on the obligations between the Company and the other Purchasers, by written notice to the other parties, if the Closing has not been consummated on or before the fifth (5th) Trading Day following the date hereof; provided, however, that no such termination will affect the right of any party to sue for any breach by any other party (or parties).

5.2. **Fees and Expenses.** Except as expressly set forth in the Transaction Documents to the contrary, each party shall pay the fees and expenses of its advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party incident to the negotiation, preparation, execution, delivery and performance of this Agreement. The Company shall pay all Transfer Agent fees (including, without limitation, any fees required for same-Calendar Day processing of any instruction letter delivered by the Company and any exercise notice delivered by a Purchaser), stamp taxes and other taxes and duties levied in connection with the delivery of any Securities to the Purchasers.

5.3. **Entire Agreement.** The Transaction Documents, together with the exhibits and schedules thereto, the Prospectus and the Prospectus Supplement, contain the entire understanding of the parties with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules.

5.4. **Notices.** Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be deemed given and effective on the earliest of: (a) the time of transmission, if such notice or communication is delivered via email at the email address as set forth on the signature pages attached hereto at or prior to 5:30 p.m. (New York City time) on a Trading Day, (b) the next Trading Day after the time of transmission, if such notice or communication is delivered via email at the email address as set forth on the signature pages attached hereto on a Calendar Day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (c) the second (2nd) Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service or (d) upon actual receipt by the party to whom such notice is required to be given. The address for such notices and communications shall be as set forth on the signature pages attached hereto. To the extent that any notice provided pursuant to any Transaction Document constitutes, or contains material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

5.5. **Amendments; Waivers.** No provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Company and Purchasers which purchased at least 50.1% in interest of the Shares and Pre-Funded Warrants based on the initial Subscription Amounts hereunder (or, prior to Closing, the Company and each Purchaser) or, in the case of a waiver, by the party against whom enforcement of any such waived provision is sought, provided that if any amendment, modification or waiver disproportionately and adversely impacts a Purchaser (or multiple Purchasers), the consent of such disproportionately impacted Purchaser (or multiple Purchasers) shall also be required. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right. Any proposed amendment or waiver that disproportionately, materially and adversely affects the rights and obligations of any Purchaser relative to the comparable rights and obligations of the other Purchasers shall require the prior written consent of such adversely affected Purchaser. Any amendment effected in accordance with this Section 5.5 shall be binding upon each Purchaser and holder of Securities and the Company.

5.6. **Headings**. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof.

5.7. **Successors and Assigns**. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns. The Company may not assign this Agreement or any rights or obligations hereunder without the prior written consent of each Purchaser (other than by merger). Any Purchaser may assign any or all of its rights under this Agreement to any Person to whom such Purchaser assigns or transfers any Securities, provided that such transferee agrees in writing to be bound, with respect to the transferred Securities, by the provisions of the Transaction Documents that apply to the "Purchasers."

5.8. **No Third-Party Beneficiaries**. The Placement Agent shall be the third party beneficiary of the representations and warranties of the Company in Section 3.1 and the representations and warranties of the Purchasers in Section 3.3. This Agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns and is not for the benefit of, nor may any provision hereof be enforced by, any other Person, except as otherwise set forth in Section 4.8 and this Section 5.8.

5.9. **Governing Law**. All questions concerning the construction, validity, enforcement and interpretation of the Transaction Documents shall be governed by and construed and enforced in accordance with the law of the State of Delaware without regard to the principles of conflicts of law thereof. Each party agrees that all legal Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective affiliates, directors, officers, stockholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of Wilmington, Delaware. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of Wilmington and County of New Castle for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Action or Proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such Action or Proceeding is improper or is an inconvenient venue for such Proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such Action or Proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law. If any party shall commence an Action or Proceeding to enforce any provisions of the Transaction Documents, then, in addition to the obligations of the Company under Section 4.8, the prevailing party in such Action or Proceeding shall be reimbursed by the non-prevailing party for its reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such Action or Proceeding.

5.10. **Survival.** The representations and warranties contained herein shall survive the Closing and the delivery of the Securities.

5.11. **Execution.** This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to each other party, it being understood that the parties need not sign the same counterpart. If any signature is delivered by e-mail delivery of a “.pdf” format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such “.pdf” signature page were an original thereof.

5.12. **Severability.** If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

5.13. **Rescission and Withdrawal Right.** Notwithstanding anything to the contrary contained in (and without limiting any similar provisions of) any of the other Transaction Documents, whenever any Purchaser exercises a right, election, demand or option under a Transaction Document and the Company does not timely perform its related obligations within the periods therein provided, then such Purchaser may rescind or withdraw, in its sole discretion from time to time upon written notice to the Company, any relevant notice, demand or election in whole or in part without prejudice to its future actions and rights; provided, however, that, in the case of a rescission of an exercise of a Warrant, the applicable Purchaser shall be required to return any shares of Common Stock subject to any such rescinded exercise notice concurrently with the return to such Purchaser of the aggregate exercise price paid to the Company for such Shares and the restoration of such Purchaser’s right to acquire such Shares pursuant to such Purchaser’s Warrant (including, issuance of a replacement warrant certificate evidencing such restored right).

5.14. **Replacement of Securities.** If any certificate or instrument evidencing any Securities is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation thereof (in the case of mutilation), or in lieu of and substitution therefor, a new certificate or instrument, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction. The applicant for a new certificate or instrument under such circumstances shall also pay any reasonable third-party costs (including customary indemnity) associated with the issuance of such replacement Securities.

5.15. **Remedies.** In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, each of the Purchasers and the Company will be entitled to specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any loss incurred by reason of any breach of obligations contained in the Transaction Documents and hereby agree to waive and not to assert in any Action for specific performance of any such obligation the defense that a remedy at law would be adequate.

5.16. **Payment Set Aside.** To the extent that the Company makes a payment or payments to any Purchaser pursuant to any Transaction Document or a Purchaser enforces or exercises its rights thereunder, and such payment or payments or the proceeds of such enforcement or exercise or any part thereof are subsequently invalidated, declared to be fraudulent or preferential, set aside, recovered from, disgorged by or are required to be refunded, repaid or otherwise restored to the Company, a trustee, receiver or any other Person under any law (including, without limitation, any bankruptcy law, state or federal law, common law or equitable cause of action), then to the extent of any such restoration the obligation or part thereof originally intended to be satisfied shall be revived and continued in full force and effect as if such payment had not been made or such enforcement or setoff had not occurred.

5.17. **Independent Nature of Purchasers' Obligations and Rights.** The obligations of each Purchaser under any Transaction Document are several and not joint with the obligations of any other Purchaser, and no Purchaser shall be responsible in any way for the performance or non-performance of the obligations of any other Purchaser under any Transaction Document. Nothing contained herein or in any other Transaction Document, and no action taken by any Purchaser pursuant hereto or thereto, shall be deemed to constitute the Purchasers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by the Transaction Documents. Each Purchaser shall be entitled to independently protect and enforce its rights including, without limitation, the rights arising out of this Agreement or out of the other Transaction Documents, and it shall not be necessary for any other Purchaser to be joined as an additional party in any Proceeding for such purpose. Each Purchaser has been represented by its own separate legal counsel in its review and negotiation of the Transaction Documents. For reasons of administrative convenience only, each Purchaser and its respective counsel have chosen to communicate with the Company through the legal counsel to the Placement Agent. The legal counsel of the Placement Agent does not represent any of the Purchasers and only represents the Placement Agent. The Company has elected to provide all Purchasers with the same terms and Transaction Documents for the convenience of the Company and not because it was required or requested to do so by any of the Purchasers. It is expressly understood and agreed that each provision contained in this Agreement and in each other Transaction Document is between the Company and a Purchaser, solely, and not between the Company and the Purchasers collectively and not between and among the Purchasers.

5.18. **Liquidated Damages.** The Company's obligations to pay any partial liquidated damages or other amounts owing under the Transaction Documents is a continuing obligation of the Company and shall not terminate until all unpaid partial liquidated damages and other amounts have been paid notwithstanding the fact that the instrument or security pursuant to which such partial liquidated damages or other amounts are due and payable shall have been canceled.

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

5.20. **Construction.** The parties agree that each of them and/or their respective counsel have reviewed and had an opportunity to revise the Transaction Documents and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of the Transaction Documents or any amendments thereto. In addition, each and every reference to share prices and shares of Common Stock in any Transaction Document shall be subject to adjustment for reverse and forward stock splits, stock dividends, stock combinations and other similar transactions of the Common Stock that occur after the date of this Agreement.

5.21. **WAIVER OF JURY TRIAL. IN ANY ACTION, SUIT, OR PROCEEDING IN ANY JURISDICTION BROUGHT BY ANY PARTY AGAINST ANY OTHER PARTY, THE PARTIES EACH KNOWINGLY AND INTENTIONALLY, TO THE GREATEST EXTENT PERMITTED BY APPLICABLE LAW, HEREBY ABSOLUTELY, UNCONDITIONALLY, IRREVOCABLY AND EXPRESSLY WAIVES FOREVER TRIAL BY JURY.**

[LIXT Securities Purchase Agreement Signature Pages Follow]

IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

[]

Address for Notice:

By: _____
Name: _____
Title: Chief Executive Officer

Email: _____

IN WITNESS WHEREOF, the undersigned has caused this Securities Purchase Agreement to be duly executed by its authorized signatory as of the date first indicated above.

Name of Purchaser:	[●]
Signature of Authorized Signatory of Purchaser:	
Name of Authorized Signatory:	[●]
Title of Authorized Signatory:	[●]
Email Address of Authorized Signatory:	[●]
Address for Notice to Purchaser:	[●]
Address for Delivery of Securities to Purchaser (if not same as address for notice):	[●]
Subscription Amount:	[●]
Shares:	[●]
Pre-funded Warrants:	[●]
Beneficial Ownership Blocker:	[●]
Common Warrants:	[●]
Beneficial Ownership Blocker:	[●]
Employer Identification Number:	[●]

Exhibit 1.15.1

Form of Registered Common Warrant

Exhibit 1.42.1

Form of Registered Pre-funded Warrant



December [●], 2025

PERSONAL AND CONFIDENTIAL**Re: | Registered Direct Shelf Takedown | Placement Agent Agreement**

Dear Mr. Pursglove:

The purpose of this placement agent agreement (the "**Agreement**") is to outline our agreement pursuant to which Spartan Capital Securities, LLC ("**Spartan**") will act as the placement agent on a "best efforts" basis in connection with the proposed Registered Direct Shelf Takedown (the "**Placement**") by [] (collectively, with its subsidiaries and affiliates, the "**Company**") of units consisting of its shares of Common Stock (or Pre-funded Warrants to purchase shares of Common Stock in lieu of shares of Common Stock) and warrants to purchase its shares of Common Stock (the "**Securities**"). This placement agent agreement sets forth certain conditions and assumptions upon which the Placement is premised. The Company expressly acknowledges and agrees that Spartan's obligations hereunder are on a reasonable "best efforts" basis only and that the execution of this Agreement does not constitute a commitment by Spartan to purchase the Securities and does not ensure the successful placement of the Securities or any portion thereof or the success of Spartan with respect to securing any other financing on behalf of the Company. The Company confirms that entry into this placement agent agreement and completion of the Placement with Spartan will not breach or otherwise violate the Company's obligations to any other party or require any payments to such other party. For the sake of clarity, such obligations may include but not be limited to obligations under an engagement letter, placement agency agreement, underwriting agreement, advisory agreement, right of first refusal, tail fee obligation or other agreement.

The terms of our agreement are as follows:

1. **Engagement**. The Company hereby engages Spartan, for the period beginning on the date hereof and ending [], thereafter or upon the completion of the Placement, whichever is sooner (the "**Engagement Period**"), to act as the Company's exclusive investment bank in connection with the proposed Placement. During the Engagement Period or until the consummation of the Placement, and as long as Spartan is proceeding in good faith with preparations for the Placement, the Company agrees not to solicit, negotiate with or enter into any agreement with any other source of financing (whether equity, debt or otherwise), any underwriter, potential underwriter, placement agent, financial advisor, investment banking firm or any other person or entity in connection with an offering of the Company's debt or equity securities or any other financing by the Company. Spartan will use its reasonable "best efforts" to solicit offers to purchase the Securities from the Company on the terms, and subject to the conditions, set forth in the Prospectus (as defined below). Spartan shall use commercially reasonable efforts to assist the Company in obtaining performance by each Purchaser (as defined below) whose offer to purchase Securities has been solicited by Spartan, but Spartan shall not, except as otherwise provided in this Agreement, be obligated to disclose the identity of any potential purchaser or have any liability to the Company in the event any such purchase is not consummated for any reason. The Company acknowledges that under no circumstances will Spartan be obligated to underwrite or purchase any Securities for its own account and, in soliciting purchases of the Securities, Spartan shall act solely as an agent of the Company. The services provided pursuant to this placement agent agreement shall be on an "agency" basis and not on a "principal" basis.
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2. **The Placement.** The Placement is expected to consist of a sale of approximately \$[●] million of the Company's Securities. Spartan will act as placement agent for the Placement subject to, among other matters referred to herein and additional customary conditions, completion of Spartan's due diligence examination of the Company and its affiliates, listing approval by the Nasdaq Capital Market ("**Exchange**") of the Securities to be issued, or an application for such listing shall have been submitted to the Exchange, and satisfactory evidence of such action shall have been provided to Spartan, and the execution of a definitive Securities Purchase Agreement in connection with the Placement (the "**Securities Purchase Agreement**"). The actual size of the Placement, the precise number of Securities to be offered by the Company and the offering price will be the subject of continuing negotiations between the Company and the investors thereto. In connection with the entry into the Securities Purchase Agreement, the Company (i) will meet with Spartan and its representatives to discuss such due diligence matters and to provide such documents as Spartan may require; (ii) will not file with the Commission any document regarding the Placement without the prior approval of Spartan and its counsel; (iii) will deliver to Spartan and the investors in the Placement such legal and accounting opinions and letters (including, without limitation, accounting comfort letters, legal opinions, negative assurance letters, good standing certificates and officers' and secretary certificates) as Spartan may require, all in form and substance acceptable to Spartan and (iv) will ensure that Spartan is a third party beneficiary of all representations, warranties, covenants, closing conditions and deliverables in connection with the Placement.
3. **Placement Compensation.** The placement commission will be 6.0% for the Placement.
4. **Registration Statement.** To the extent the Company decides to proceed with the Placement, the Company will use its currently effective Registration Statement on Form S-3 (the "**Registration Statement**") under the Securities Act of 1933, as amended (the "**Securities Act**") and a prospectus included therein (the "**Prospectus**") covering the Securities to be offered and sold in the Placement. The Registration Statement (including the Prospectus therein), and all amendments and supplements thereto, will be in form reasonably satisfactory to Spartan and counsel to Spartan. Other than any information provided by Spartan in writing specifically for inclusion in the Registration Statement or the Prospectus, the Company will be solely responsible for the contents of its Registration Statement and Prospectus and any and all other written or oral communications provided by or on behalf of the Company to any actual or prospective investor of the Securities, and the Company represents and warrants that such materials and such other communications will not, as of the date of the offer or sale of the Securities, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. If at any time prior to the completion of the offer and sale of the Securities an event occurs that would cause the Registration Statement or Prospectus (as supplemented or amended) to contain an untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading, the Company will notify Spartan immediately of such event and Spartan will suspend solicitations of the prospective purchasers of the Securities until such time as the Company shall prepare a supplement or amendment to the Registration Statement or Prospectus that corrects such statement or omission.

5. **Expenses.** Out of the proceeds of the Placement, the Company shall pay Spartan up to \$85,000 for fees and expenses of legal counsel and other expenses, including but not limited to, roadshow expenses and cost of background checks; plus the additional amount payable by the Company pursuant to the following sentence and, if applicable, the costs associated with the use of a third-party electronic road show service (such as Net Roadshow); provided, however, that such amount in no way limits or impairs the indemnification and contribution provisions of this placement agent agreement. The Company will bear all fees, disbursements and expenses in connection with the Placement, including, without limitation, the Company's legal and accounting fees and disbursements; the costs of preparing, printing, mailing and delivering the Registration Statement, the preliminary and final prospectus contained therein and amendments thereto, post-effective amendments and supplements thereto, any other offering materials, this Agreement and related documents (all in such quantities as Spartan may reasonably require); preparing and printing stock certificates and warrant certificates; the costs of any "due diligence" meetings or background checks for members of management; filing fees (including SEC filing fees), costs and expenses (including third party expenses and disbursements) incurred in registering the Placement, FINRA filing fees; costs and expenses of qualifying the offering under the "blue sky" laws of the states specified by Spartan; transfer taxes; and transfer and warrant agent and registrar fees, but excluding those costs and expenses that FINRA regulations require to be borne by a selling agent, placement agent or underwriter..
6. **Closing; Closing Deliverables.** Unless otherwise directed by the Placement Agent, settlement of the Securities shall occur via "Delivery Versus Payment" ("**DVP**") (i.e., on the Closing Date, the Company shall cause the Depository to issue the Securities directly to the clearing firm designated by the Placement Agent; upon receipt of such Securities, the Placement Agent shall promptly electronically deliver such Securities to the applicable Purchaser, and payment therefor shall be made by the Placement Agent (or its clearing firm) by wire transfer to the Company).

6.1. **Company Deliveries.**

6.1.1. On the date hereof, the Company shall deliver each of the following:

6.1.1.1 This Agreement duly executed by the Company.

6.1.1.2 A certificate executed by the Chief Financial Officer of the Company in customary form reasonably satisfactory to the Placement Agent and its counsel.

6.1.1.3 The Escrow Agreement duly executed by the Company.

6.1.2. On or prior to the Closing Date, the Company shall deliver each the following:

6.1.2.1 A legal opinion of Sichenzia Ross Ference Carmel LLP, addressed to the Placement Agent and the Purchasers, in form and substance reasonably acceptable to the Placement Agent and Purchasers.

6.1.2.2 A copy of the irrevocable instructions to the Transfer Agent instructing the Transfer Agent to deliver, on an expedited basis, a certificate (or at the request of the Purchaser, book entry statement) evidencing a number of Shares equal to such Purchaser's Subscription Amount, registered in the name of such Purchaser; subject to the first sentence of Section 6, a copy of the irrevocable instructions to the Transfer Agent instructing the Transfer Agent to deliver on an expedited basis via The Depository Trust Company Deposit or Withdrawal at Custodian system ("**DWAC**") Shares equal to the portion of such Purchaser's Subscription Amount applicable to Shares, divided by the Per Unit Purchase Price, registered in the name of such Purchaser.

6.1.2.3 For each Purchaser of Pre-Funded Warrants pursuant to Section 6, a Pre-Funded Warrant registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to the portion of such Purchaser's Subscription Amount applicable to Pre-Funded Warrants divided by the Per Unit Purchase Price, with an exercise price equal to \$0.00001, subject to adjustment as provided therein.

6.1.2.4 The Common Warrants registered in the name of such Purchaser to purchase up to a number of shares of Common Stock equal to 100.0% of the sum of the number of Shares and Pre-Funded Warrants stated on such Purchaser's signature page hereto.

6.1.2.5 The Company shall have provided each Purchaser with the Escrow Agent's wire instructions.

6.1.2.6 The Company shall have provided Spartan the signed flow of funds executed by the Chief Executive Officer or Chief Financial Officer.

6.1.2.7 A duly executed and delivered Officers' Certificate, in customary form reasonably satisfactory to the Placement Agent and its counsel.

6.1.2.8 A cold comfort letter from the Company's auditor, addressed to the Placement Agent in form and substance reasonably satisfactory in all material respects.

6.1.2.9 Duly executed joint written instructions to the Escrow Agent.

6.1.2.10 The Prospectus (which may be delivered in accordance with Rule 172 under the Securities Act).

7. **Conditions of the Obligations of the Placement Agent.** The obligations of the Placement Agent hereunder shall be subject to the accuracy of the representations and warranties (together with any related disclosures in any disclosure schedules appended thereto) on the part of the Company set forth in the Securities Purchase Agreement (on which the Company authorizes the Placement Agent to rely), in each case as of the date hereof and as of the Closing Date as though then made, to the timely performance by each of the Company of its covenants and other obligations hereunder on and as of such dates, and to each of the following additional conditions:

7.1. **Regulatory Matters.**

7.1.1. **Effectiveness of Registration Statement; Rule 424 Information.** The Registration Statement is effective on the date of this Agreement, and, on the Closing Date no stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued under the Securities Act, no order preventing or suspending the use of any Preliminary Prospectus or the Prospectus has been issued and no proceedings for any of those purposes have been instituted or are pending or, to the Company's knowledge, contemplated by the Commission. The Company has complied with each request (if any) from the Commission for additional information. All filings with the Commission required by Rule 424 under the Securities Act to have been filed by the Closing Date shall have been made within the applicable time period prescribed for such filing by Rule 424.

7.1.2. **Listing of Additional Shares.** On or before the Closing Date, the Company shall have filed a notice with the Exchange with respect to the Company's additional listing of the securities sold in the Offering.

7.2. **Closing Deliverables.** The Company shall have delivered all closing deliverables to the Placement Agent as set forth in Section 6.1 as of the time required and in form reasonably satisfactory to the Placement Agent.

7.2.1. **No Material Changes.** Prior to and on the Closing Date: (i) there shall have been no Material Adverse Effect (as defined below) or development involving a prospective Material Adverse Effect (as defined below) in the condition or prospects or the business activities, financial or otherwise, of the Company from the latest dates as of which such condition is set forth in the Registration Statement and the Prospectus; (ii) no action, suit or proceeding, at law or in equity, shall have been pending or threatened against the Company or any affiliates of the Company before or by any court or federal or state commission, board or other administrative agency wherein an unfavorable decision, ruling or finding may materially adversely affect the business, operations, prospects or financial condition or income of the Company ("Material Adverse Effect"), except as set forth in the Registration Statement and the Prospectus; (iii) no stop order shall have been issued under the Securities Act and no proceedings therefor shall have been initiated or threatened by the Commission; and (iv) the Registration Statement and the Prospectus and any amendments or supplements thereto shall contain all material statements which are required to be stated therein in accordance with the Securities Act and the Securities Act regulations and shall conform in all material respects to the requirements of the Securities Act and the Securities Act regulations, and neither the Registration Statement nor the Prospectus nor any amendment or supplement thereto shall contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

7.2.2. **Additional Documents**. At the Closing Date, Placement Agent's counsel shall have been furnished with such documents and opinions as they may require in order to evidence the accuracy of any of the representations or warranties, or the fulfillment of any of the conditions, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Securities as herein contemplated shall be satisfactory in form and substance to the Placement Agent and Placement Agent's counsel.

8. **Prior Agreement**. By entering into this Agreement, the parties agree that that certain letter of engagement, dated [___], entered into between the same parties hereof, shall automatically terminate and cease to have any effect whatsoever and shall be superseded in its entirety by this Agreement.
9. **Termination**. Notwithstanding anything to the contrary contained herein, the Company agrees that the provisions relating to the payment of fees, reimbursement of expenses, indemnification and contribution, confidentiality, conflicts, independent contractor and waiver of the right to trial by jury will survive any termination or expiration of this placement agent agreement. Notwithstanding anything to the contrary contained herein, the Company has the right to terminate this Agreement for cause in compliance with FINRA Rule 5110(g)(5)(B)(i). Notwithstanding anything to the contrary contained in this Agreement, in the event that no Placement is completed for any reason whatsoever during the Engagement Period, the Company shall be obligated to pay to Spartan its actual and accountable out-of-pocket expenses related to the Placement (including the fees and disbursements of Placement Agent's legal counsel) and if applicable, for electronic road show service used in connection with the Placement. During the engagement hereunder: (i) the Company will not, and will not permit its representatives to, other than in coordination with Spartan, contact or solicit institutions, corporations or other entities or individuals as potential purchasers of the Securities and (ii) the Company will not pursue any financing transaction which would be in lieu of the Placement. Furthermore, the Company agrees that during Spartan's engagement hereunder, all inquiries from prospective investors will be referred to Spartan.
10. **Publicity**. The Company agrees that it will not issue press releases or engage in any other publicity, without Spartan's prior written consent, commencing on the date hereof and continuing until the final Closing of the Placement.

11. **Information.** During the Engagement Period or until the Closing, the Company agrees to cooperate with Spartan and to furnish, or cause to be furnished, to Spartan, any and all information and data concerning the Company, and the Placement that Spartan deems appropriate (the “**Information**”). The Company will provide Spartan reasonable access during normal business hours from and after the date of execution of this Agreement until the Closing to all of the Company’s assets, properties, books, contracts, commitments and records and to the Company’s officers, directors, employees, appraisers, independent accountants, legal counsel and other consultants and advisors. Except as contemplated by the terms hereof or as required by applicable law, Spartan will keep strictly confidential all non-public Information concerning the Company provided to Spartan. No obligation of confidentiality will apply to Information that: (a) is in the public domain as of the date hereof or hereafter enters the public domain without a breach by Spartan, (b) was known or became known by Spartan prior to the Company’s disclosure thereof to Spartan as demonstrated by the existence of its written records, (c) becomes known to Spartan from a source other than the Company which information is not provided by the breach of an obligation of confidentiality owed to the Company, (d) is disclosed by the Company to a third party without restrictions on its disclosure or (e) is independently developed by Spartan as demonstrated by its written records. For the avoidance of doubt, except as otherwise provided herein, all information which is not publicly available relating to the Company’s proprietary technology is proprietary and confidential.
12. **No Third Party Beneficiaries; No Fiduciary Obligations.** This Agreement does not create, and shall not be construed as creating, rights enforceable by any person or entity not a party hereto, except those entitled hereto by virtue of the indemnification provisions hereof. The Company acknowledges and agrees that: (i) Spartan is not and shall not be construed as a fiduciary of the Company and shall have no duties or liabilities to the equity holders or the creditors of the Company or any other person or entity by virtue of this placement agent agreement or the retention of Spartan hereunder, all of which are hereby expressly waived; and (ii) Spartan is a full service securities firm engaged in a wide range of businesses and from time to time, in the ordinary course of its business, Spartan or its affiliates may hold long or short positions and trade or otherwise effect transactions for its own account or the account of its customers in debt or equity securities or loans of the companies which may be the subject of the transactions contemplated by this placement agent agreement. During the course of Spartan’s engagement with the Company, Spartan may have in its possession material, non-public information regarding other companies that could potentially be relevant to the Company or the transactions contemplated herein but which cannot be shared due to an obligation of confidence to such other companies.

13. **Indemnification, Advancement & Contribution.**

13.1. **Indemnification.** The Company agrees to indemnify and hold harmless Spartan and each of the other Indemnified Parties (as hereinafter defined) from and against any and all losses, claims, damages, obligations, penalties, judgments, awards, liabilities, costs, expenses and disbursements, and any and all actions, suits, proceedings and investigations in respect thereof and any and all legal and other costs, expenses and disbursements in giving testimony or furnishing documents in response to a subpoena or otherwise (including, without limitation, the costs, expenses and disbursements, as and when incurred, of investigating, preparing, pursuing or defending any such action, suit, proceeding or investigation (whether or not in connection with litigation in which any Indemnified Party is a party) (collectively, “**Losses**”)), directly or indirectly, caused by, relating to, based upon, arising out of, or in connection with, Spartan’s acting for the Company, including, without limitation, any act or omission by Spartan in connection with its acceptance of or the performance or non-performance of its obligations under this Agreement, any breach by the Company of any representation, warranty, covenant or agreement contained in this Agreement (or in any instrument, document or agreement relating thereto), or the enforcement by Spartan of its rights under this Agreement or these indemnification provisions, except to the extent that any such Losses are found in a final judgment by a court of competent jurisdiction (not subject to further appeal) to have resulted from the gross negligence or willful misconduct of the Indemnified Party seeking indemnification hereunder. The Company also agrees that no Indemnified Party shall have any liability (whether direct or indirect, in contract or tort or otherwise) to the Company for or in connection with the engagement of Spartan by the Company or for any other reason, except to the extent that any such liability is found in a final judgment by a court of competent jurisdiction (not subject to further appeal) to have resulted primarily and directly from such Indemnified Party’s gross negligence or willful misconduct.

These Indemnification Provisions shall extend to the following persons (collectively, the “**Indemnified Parties**”): Spartan, its present affiliated entities, managers, members, officers, employees, legal counsel, agents and controlling persons (within the meaning of the federal securities laws), and the officers, directors, partners, stockholders, members, managers, employees, legal counsel, agents and controlling persons of any of them. These indemnification provisions shall be in addition to any liability which the Company may otherwise have to any Indemnified Party.

If any action, suit, proceeding or investigation is commenced, as to which an Indemnified Party proposes to demand indemnification, it shall notify the Company with reasonable promptness; provided, however, that any failure by an Indemnified Party to notify the Company shall not relieve the Company from its obligations hereunder. An Indemnified Party shall have the right to retain counsel of its own choice to represent it, and the fees, expenses and disbursements of such counsel shall be borne by the Company. Any such counsel shall, to the extent consistent with its professional responsibilities, cooperate with the Company and any counsel designated by the Company. The Company shall be liable for any settlement of any claim against any Indemnified Party made with the Company’s written consent. The Company shall not, without the prior written consent of Spartan, settle or compromise any claim, or permit a default or consent to the entry of any judgment in respect thereof, unless such settlement, compromise or consent (i) includes, as an unconditional term thereof, the giving by the claimant to all of the Indemnified Parties of an unconditional release from all liability in respect of such claim, and (ii) does not contain any factual or legal admission by or with respect to an Indemnified Party or an adverse statement with respect to the character, professionalism, expertise or reputation of any Indemnified Party or any action or inaction of any Indemnified Party.

In order to provide for just and equitable contribution, if a claim for indemnification pursuant to these indemnification provisions is made but it is found in a final judgment by a court of competent jurisdiction (not subject to further appeal) that such indemnification may not be enforced in such case, even though the express provisions hereof provide for indemnification in such case, then the Company shall contribute to the Losses to which any Indemnified Party may be subject (i) in accordance with the relative benefits received by the Company and its stockholders, subsidiaries and affiliates, on the one hand, and the Indemnified Party, on the other hand, and (ii) if (and only if) the allocation provided in clause (i) of this sentence is not permitted by applicable law, in such proportion as to reflect not only the relative benefits, but also the relative fault of the Company, on the one hand, and the Indemnified Party, on the other hand, in connection with the statements, acts or omissions which resulted in such Losses as well as any relevant equitable considerations. No person found liable for a fraudulent misrepresentation shall be entitled to contribution from any person who is not also found liable for fraudulent misrepresentation. The relative benefits received (or anticipated to be received) by the Company and its stockholders, subsidiaries and affiliates shall be deemed to be equal to the aggregate consideration payable or receivable by such parties in connection with the transaction or transactions to which this Agreement relates relative to the amount of fees actually received by Spartan in connection with such transaction or transactions. Notwithstanding the foregoing, in no event shall the amount contributed by all Indemnified Parties exceed the amount of fees previously received by Spartan pursuant to this Agreement.

Neither termination nor completion of this Agreement shall affect these Indemnification Provisions which shall remain operative and in full force and effect. The Indemnification Provisions shall be binding upon the Company and its successors and assigns and shall inure to the benefit of the Indemnified Parties and their respective successors, assigns, heirs and personal representatives.

14. [Reserved].

15. **Governing Law; Venue.** This Agreement will be governed by and construed in accordance with the laws of the State of Delaware, without regard to principles of conflicts of law. Any controversy between the parties to this Agreement, or arising out of the Agreement, shall be resolved by arbitration before the American Arbitration Association ("AAA") in New York, New York. The following arbitration agreement should be read in conjunction with these disclosures:

15.1. ARBITRATION IS FINAL AND BINDING ON THE PARTIES.

15.2. THE PARTIES ARE WAIVING THEIR RIGHT TO SEEK REMEDIES IN COURT, INCLUDING THE RIGHT TO JURY TRIAL.

15.3. PRE-ARBITRATION DISCOVERY IS GENERALLY MORE LIMITED THAN AND DIFFERENT FROM COURT PROCEEDING; AND

15.4. THE ARBITRATORS' AWARD IS NOT REQUIRED TO INCLUDE FACTUAL FINDING OR LEGAL REASONING AND ANY PARTY'S RIGHT TO APPEAL OR TO SEEK MODIFICATION OF RULINGS BY THE ARBITRATORS IS STRICTLY LIMITED.

15.5. ARBITRATION AGREEMENT. ANY AND ALL CONTROVERSIES, DISPUTES OR CLAIMS BETWEEN SPARTAN AND YOU OR YOUR AGENTS, REPRESENTATIVES, EMPLOYEES, DIRECTORS, OFFICERS OR CONTROL PERSONS, ARISING OUT OF, IN CONNECTION WITH, OR WITH RESPECT TO (i) ANY PROVISIONS OF OR THE VALIDITY OF THIS AGREEMENT OR ANY RELATED AGREEMENTS, (ii) THE RELATIONSHIP OF THE PARTIES HERETO, OR (iii) ANY CONTROVERSY ARISING OUT OF YOUR BUSINESS SHALL BE CONDUCTED BY THE AMERICAN ARBITRATION ASSOCIATION UNDER ITS COMMERCIAL ARBITRATION RULES. ARBITRATION MUST BE COMMENCED BY SERVICE OF A WRITTEN DEMAND FOR ARBITRATION OR A WRITTEN NOTICE OF INTENTION TO ARBITRATE. IF YOU ARE A PARTY TO SUCH ARBITRATION, TO THE EXTENT PERMITTED BY THE RULES OF THE APPLICABLE ARBITRATION TRIBUNAL, THE ARBITRATION SHALL BE CONDUCTED IN NEW YORK, NEW YORK. THE DECISION AND AWARD OF THE ARBITRATORS(S) SHALL BE CONCLUSIVE AND BINDING UPON ALL PARTIES, AND ANY JUDGMENT UPON ANY AWARD RENDERED MAY BE ENTERED IN THE STATE OR FEDERAL COURTS LOCATED IN NEW YORK, NEW YORK, OR ANY OTHER COURT HAVING JURISDICTION THEREOF, AND NEITHER PARTY SHALL OPPOSE SUCH ENTRY.

16. **Miscellaneous.** The Company represents and warrants that it has all required power and authority to enter into and carry out the terms and provisions of this placement agent agreement and the execution, delivery and performance of this placement agent agreement does not breach or conflict with any agreement, document or instrument to which it is a party or bound. The binding provisions of this placement agent agreement are legally binding upon and inure to the benefit of both the Company and Spartan and their respective assigns, successors, and legal representatives. If any provision of this placement agent agreement is determined to be invalid or unenforceable in any respect, such determination will not affect such provision in any other respect, and the remainder of the placement agent agreement shall remain in full force and effect. This placement agent agreement may be executed in counterparts (including electronic counterparts), each of which shall be deemed an original but all of which together shall constitute one and the same instrument. The undersigned hereby consents to receipt of this placement agent agreement in electronic form and understands and agrees that this placement agent agreement may be signed electronically. Signatures to this placement agent agreement transmitted in electronic form will have the same effect as physical delivery of a paper document bearing the original signature, and if any signature is delivered electronically evidencing an intent to sign this placement agent agreement, such electronic mail or other electronic transmission shall create a valid and binding obligation of the undersigned with the same force and effect as if such signature were an original. Execution and delivery of this placement agent agreement by electronic mail or other electronic transmission is legal, valid and binding for all purposes.

If you are in agreement with the foregoing, please sign and return to us one copy of this placement agent agreement. This placement agent agreement may be executed in counterparts (including facsimile or .pdf counterparts), each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

[Signature Page of [] Registered Direct Shelf Takedown Placement Agent Agreement Follows]

Very truly yours,

Spartan Capital Securities, LLC

By: _____

Name: Kim Monchik

Title: Chief Administrative Officer

AGREED AND ACCEPTED:

The foregoing accurately sets forth our understanding and agreement with respect to the matters set forth herein.

[]

By: _____

Name:

Title: Chief Executive Officer

Reference is hereby made to that certain Royalty Agreement dated as of November 24, 2025 (the “Royalty Agreement”), entered into by and between Lixte Biotechnology Holdings, Inc., a Delaware company (the “Company”), and Orbit Capital Inc., a Cayman Islands corporation (the “Royalty Holder”). The Company and the Royalty Holder hereby agree, the Royalty Agreement is hereby deemed null and void and of no further force or effect.

In connection with the execution of this termination letter, each of the Company and the Royalty Holder (respectively, the “Releasor”) hereby releases and forever discharges the other party, and their respective shareholders, directors and officers thereof (each a “Covered Person”), from any and all claims, causes of actions, losses, or damages that the Releasor has or may have against any Covered Party arising out of or in connection with the Royalty Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this termination letter to be signed, sealed and delivered as of December 16, 2025.

LIXTE BIOTECHNOLOGY HOLDINGS, INC.

By: /s/ Geordan Pursglove
Name: Geordan Pursglove
Title: Chief Executive Officer

ORBIT CAPITAL INC.

By: /s/ Jason Butcher
Name: Jason Butcher
Title:

December 18, 2025

**Lixte Biotechnology Holdings, Inc. Announces \$4.3 Million Registered Direct Offering Priced at the Market Under Nasdaq Rules**

BOCA RATON, FLA, Dec. 18, 2025 (GLOBE NEWSWIRE) — Lixte Biotechnology Holdings, Inc. (NASDAQ: LIXT) (the “Company”), a biotech company focused on advancing cancer treatments, today announced that it has entered into definitive agreements in a registered direct offering with accredited investors for the purchase and sale of approximately \$4.3 million of shares of Common Stock and pre-funded and investor warrants at a price of \$4.09 per Common Unit. The entire transaction has been priced at the market under Nasdaq rules.

The offering consisted of the sale of 1,051,342 Common Units (or Pre-Funded Units), each consisting of (i) one (1) share of Common Stock or one (1) Pre-Funded Warrant and (ii) one (1) Common Warrant to purchase one (1) share of Common Stock per warrant at an exercise price of \$3.96. The public offering price per Common Unit is \$4.09 (or \$4.08999 for each Pre-Funded Unit, which is equal to the public offering price per Common Unit to be sold in the offering minus an exercise price of \$0.00001 per Pre-Funded Warrant). The Pre-Funded Warrants will be immediately exercisable and may be exercised at any time until exercised in full. For each Pre-Funded Unit sold in the offering, the number of Common Units in the offering will be decreased on a one-for-one basis. The initial exercise price of each Common Warrant is \$3.96 per share of Common Stock. The Common Warrants are exercisable immediately and expire 60 months after the initial issuance date.

Aggregate gross proceeds to the Company are expected to be approximately \$4.3 million. The transaction is expected to close on or about December 19, 2025, subject to the satisfaction of customary closing conditions. The Company expects to use the net proceeds from the offering, together with its existing cash, for general corporate purposes and working capital.

Spartan Capital Securities, LLC is acting as exclusive placement agent for the offering. Sichenzia Ross Ference Carmel LLP is acting as counsel to the Company. Kaufman & Canoles, P.C. is acting as counsel to Spartan Capital Securities LLC.

The registered direct offering is being made pursuant to an effective shelf registration statement on Form S-3 (No. 333-278874) previously filed with the U.S. Securities and Exchange Commission (SEC) and declared effective by the SEC on May 2, 2024. A final prospectus supplement and accompanying prospectus describing the terms of the proposed offering will be filed with the SEC and will be available on the SEC’s website located at www.sec.gov. Electronic copies of the final prospectus supplement and the accompanying prospectus may be obtained, when available, by contacting Spartan Capital Securities LLC., Attention: Prospectus Department, 45 Broadway, 19th Floor, New York, NY 10006, by e-mail at investmentbanking@spartancapital.com.

Interested parties should read in their entirety the prospectus supplement and the accompanying prospectus and the other documents that the Company has filed with the SEC that are incorporated by reference in such prospectus supplement and the accompanying prospectus, which provide more information about the Company and such offering.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

About Lixte Biotechnology Holdings, Inc.

LIXTE Biotechnology Holdings, Inc. is a clinical-stage pharmaceutical company focused on new targets for cancer drug development and developing and commercializing cancer therapies. LIXTE has demonstrated that its first-in-class lead clinical PP2A inhibitor, LB-100, is well-tolerated in cancer patients at doses associated with anti-cancer activity. Based on extensive published preclinical data (see www.lixte.com), LB-100 has the potential to significantly enhance chemotherapies and immunotherapies and improve outcomes for patients with cancer.

LIXTE's lead compound, LB-100, is part of a pioneering effort in an entirely new field of cancer biology – activation lethality – that is advancing a new treatment paradigm. LIXTE's new approach is covered by a comprehensive patent portfolio. Proof-of-concept clinical trials are currently in progress for Ovarian Clear Cell Carcinoma and Metastatic Colon Cancer. Additional information about LIXTE can be found at www.lixte.com.

Forward-Looking Statements

The foregoing material 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, each as amended. Forward-looking statements include all statements that do not relate solely to historical or current facts, including without limitation statements regarding the Company's product development and business prospects, and can be identified by the use of words such as “may,” “will,” “expect,” “project,” “estimate,” “anticipate,” “plan,” “believe,” “potential,” “should,” “continue” or the negative versions of those words or other comparable words. Forward-looking statements are not guarantees of future actions or performance. These forward-looking statements are based on information currently available to the Company and its current plans or expectations and are subject to a number of risks and uncertainties that could significantly affect current plans. Should one or more of these risks or uncertainties materialize, or the underlying assumptions prove incorrect, actual results may differ significantly from those anticipated, believed, estimated, expected, intended, or planned. Although the Company believes that the expectations reflected in the forward-looking statements are reasonable, the Company cannot guarantee future results, performance, or achievements. Except as required by applicable law, including the security laws of the United States, the Company does not intend to update any of the forward-looking statements to conform these statements to actual results.

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