

**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): **August 3, 2022**

ACELRX PHARMACEUTICALS, INC.

(Exact Name of Registrant as Specified in Charter)

Delaware
(State or other jurisdiction of incorporation)

001-35068
(Commission File Number)

41-2193603
(IRS Employer Identification No.)

25821 Industrial Boulevard, Suite 400
Hayward, CA
(Address of Principal Executive Offices)

94545
(Zip Code)

Registrant's telephone number, including area code: **(650) 216-3500**

(Former name or Former Address, if Changed Since Last Report.)

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

- Written communications pursuant to Rule 425 under the Securities Act (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(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.001 par value	ACRX	The Nasdaq Global Market

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.

Securities Purchase Agreement

On August 3, 2022, AcelRx Pharmaceuticals, Inc., a Delaware corporation (the “Company”), entered into a Securities Purchase Agreement (the “Purchase Agreement”) with Lincoln Park Capital Fund, LLC (the “Purchaser”), pursuant to which the Company issued on August 3, 2022 (the “Closing Date”), in a private placement transaction (the “Transaction”), an aggregate of 3,000 shares (the “Shares”) of Series A Preferred Stock, par value \$0.001 per share (the “Series A Preferred”), together with a warrant (the “Warrant”) to purchase up to an aggregate of 1,623,008 shares (the “Warrant Shares”) of common stock of the Company (the “Common Stock”) at an exercise price of \$0.2033 per share (subject to adjustment as provided in the Warrant, the “Exercise Price”), for an aggregate subscription amount equal to \$300,000. The Warrant is immediately exercisable and has a term ending on February 3, 2028.

The Company previously filed a preliminary proxy statement with the Securities and Exchange Commission (the “SEC” or the “Commission”) relating to its upcoming special meeting of stockholders (the “Special Meeting”). As disclosed in the preliminary proxy statement, the item to be considered by the Company’s stockholders at the Special Meeting is a proposal to adopt and approve a proposed amendment to the Company’s Amended and Restated Certificate of Incorporation and authorize the Board of Directors of the Company (the “Board”), in its sole discretion, to effect a reverse stock split of the outstanding shares of Common Stock at any time on or before the one year anniversary of the Special Meeting, at a reverse stock split ratio ranging from 1-for-10 to 1-for-30, as determined by the Board at a later date. The Purchase Agreement requires that the Company convene, no later than November 1, 2022 (assuming no review of the Company’s proxy statement by the Commission), an annual meeting or special meeting of stockholders for the purpose of presenting to the Company’s stockholders a proposal (the “Proposal”) to approve a reverse stock split of its outstanding Common Stock (the “Reverse Stock Split”), with the recommendation of the Board that the Proposal be approved, and that the Company use reasonable best efforts to obtain approval of the Proposal.

Pursuant to the Purchase Agreement, the Company filed a Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock (the “Certificate of Designation”) with the Secretary of State of Delaware designating the rights, preferences and limitations of the Series A Preferred. The Certificate of Designation provides, among other things, that except as otherwise provided in the Certificate of Designation or as otherwise required by law, the Series A Preferred will have no voting rights (other than the right to vote as a class on certain matters as provided in the Certificate of Designation). However, pursuant to the Certificate of Designation, each share of Series A Preferred entitles the holder thereof (i) to vote on the Proposal and any proposal to adjourn any meeting of stockholders called for the purpose of voting on the Proposal, and (ii) to 1,000,000 votes per share of Series A Preferred on the Proposal and any such adjournment proposal. The Series A Preferred shall, except as required by law, vote together with the Common Stock (and other issued and outstanding shares of preferred stock entitled to vote), as a single class; *provided, however*, that such shares of Series A Preferred shall, to the extent cast on the Proposal or any such adjournment proposal, be automatically and without further action of the holders thereof voted in the same proportion as the shares of Common Stock (excluding any shares of Common Stock that are not voted) and any other issued and outstanding shares of preferred stock of the Company entitled to vote (other than the Series A Preferred or shares of such other preferred stock, if any, not voted) are voted on the Proposal. The Purchaser has agreed in the Purchase Agreement to vote the shares of Series A Preferred purchased in the Transaction in favor of the Proposal, in the manner and to the extent set forth in the Certificate of Designation, in a manner that “mirrors” the proportions on which the shares of Common Stock (excluding any shares of Common Stock that are not voted) and any other issued and outstanding shares of preferred stock of the Company entitled to vote (excluding the Series A Preferred and shares of such other preferred stock, if any, not voted) are voted on the Proposal.

The Purchase Agreement contains customary representations, warranties and agreements of the Company and the Purchaser, and customary indemnification rights and obligations of the parties.

The Company expects to use the net proceeds from the Transaction for general corporate purposes, which may include without limitation working capital, capital expenditures, research and development expenditures, regulatory affairs expenditures, clinical trial expenditures, acquisitions of or investments in new companies, technologies or products, and payment of indebtedness or obligations.

The representations, warranties and covenants contained in the Purchase Agreement were made solely for the benefit of the parties to the Purchase Agreement and may be subject to limitations agreed upon by the contracting parties. Accordingly, the Purchase Agreement is filed as an exhibit to this Current Report on Form 8-K to provide investors with information regarding the terms of the Purchase Agreement, and not to provide investors with any other factual information regarding the Company or its business, and should be read in conjunction with the disclosures in the Company's periodic reports and other filings with the Commission.

Certificate of Designation

On August 3, 2022, the Company filed the Certificate of Designation with the Secretary of State of the State of Delaware designating 3,000 shares out of the authorized but unissued shares of its preferred stock as Series A Preferred with a stated par value of \$0.001 per share. The Series A Preferred will be entitled to customary dividends and distributions when and if paid on shares of the Common Stock and will be entitled to vote on an as-converted basis on any matter presented to the stockholders of the Company or at any meeting of stockholders, subject to certain beneficial ownership limitations. The Series A Preferred will have preference over the Common Stock with respect to distribution of assets or available proceeds, as applicable, in the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company or any other deemed liquidation event.

Each share of Series A Preferred is convertible at the option of the holder, at any time and from time to time after the effective date of a Reverse Stock Split, into that number of shares (the "Conversion Shares" and, together with the Shares, the Warrant and the Warrant Shares, the "Securities") of Common Stock (subject to the Beneficial Ownership Limitation and the Exchange Cap described below) determined by dividing the stated value of such share of Series A Preferred by the Conversion Price then in effect, rounded down to the nearest whole share (with cash paid in lieu of any fractional shares). The "Conversion Price" for the Series A Preferred equals 90% of the lesser of (i) the closing sale price of the Common Stock on the trading day immediately prior to the Closing Date and (ii) the average of the closing sale prices for the Common Stock on the five trading days immediately prior to the Closing Date, subject to adjustment as provided in the Certificate of Designation; *provided*, that the Conversion Price may not fall below the par value per share of the Common Stock and may not exceed \$0.35 per share. Based on the initial Conversion Price of \$0.1848 per share, the 3,000 Shares of Series A Preferred are initially convertible into approximately 1,623,008 shares of Common Stock. The Conversion Price is subject to adjustment as set forth in the Certificate of Designation for stock dividends, stock splits, reverse stock splits, and similar events. Upon conversion, the shares of Series A Preferred shall resume the status of authorized but unissued shares of preferred stock of the Company.

Subject to the Purchaser's right to elect to convert all or a portion of the Series A Preferred at any time during the 15 business days following the effective date of the Reverse Stock Split (the "Company Redemption Period"), the Company may, with prior notice to the holders of the Series A Preferred specified in the Certificate of Designation, redeem all or a portion of the Series A Preferred held by such holders at any time at 105% of the stated value; *provided, however*, that a Company redemption request shall not be effective if received by a holder of Series A Preferred before the date of the Reverse Stock Split. Each holder of Series A Preferred will have the right, with the prior notice to the Company as specified in the Certificate of Designation, to require the Company to redeem all or a portion of the Series A Preferred held by such holder following the expiration of the Company Redemption Period at 110% of the stated value. In addition, the Company will automatically redeem all of the Series A Preferred within five business days following a delisting event as specified in the Certificate of Designation at 100% of the stated value.

Warrant

The Warrant is immediately exercisable and has a term ending on February 3, 2028. The Warrant is exercisable by means of cash. However, if at the time of exercise there is no effective registration statement registering, or no current prospectus available for, the resale of the Warrant Shares by the holder, then a holder may also exercise a Warrant at the holder's election, in whole or in part, at such time by means of a net exercise of the Warrant on a cashless basis. The Warrant provides for proportional adjustment of the number and kind of securities purchasable upon exercise of the Warrant and the per share Exercise Price upon the occurrence of certain events such as stock splits, combinations, reverse stock splits and similar events. In addition, until 12 months after the Closing Date, if the Company issues or sells (or is deemed to have issued or sold) any Common Stock, Convertible Securities or Options (as defined in the Warrant), but excluding shares of Common Stock deemed to have been issued or sold by the Company in an Exempt Issuance (as defined in the Warrant) or to extend the term of such securities, for a consideration per share (the "New Issuance Price") less than a price equal to the Exercise Price in effect immediately prior to such issue or sale or deemed issuance or sale (each of the foregoing, a "Dilutive Issuance"), then immediately after such Dilutive Issuance, the Exercise Price then in effect shall be reduced to an amount equal to the New Issuance Price.

Registration Rights Agreement

Pursuant to a Registration Rights Agreement entered into with the Purchaser, the Company has agreed to file a registration statement with the SEC by (i) if all Series A Preferred has not been fully redeemed, the 30th day after the effective date of the Reverse Stock Split, or (ii) if all of the Series A Preferred has been fully redeemed, 120 days after the Closing Date, to register for resale from time to time the shares of Common Stock that are issuable upon conversion of the Series A Preferred and that are issuable upon exercise of the Warrant, and to use commercially reasonable efforts to have the registration statement declared effective by the time periods set forth in the registration statement and to remain continuously effective for the time periods set forth in the Registration Rights Agreement. The Company agreed to indemnify the other party and certain affiliates against certain liabilities related to the registration statement or violation of federal securities laws in connection with the Company's performance of its obligations under the agreement.

The foregoing summaries of the Purchase Agreement, the Registration Rights Agreement, the Warrant, and Certificate of Designation do not purport to be a complete description of the rights, preferences, privileges and obligations of the parties thereunder and are subject to, and qualified in their entirety by, forms of such documents attached as Exhibits 10.1, 10.2, 4.1, and 3.1, respectively, to this Current Report on Form 8-K, which are incorporated herein by reference.

Item 3.02 Unregistered Sales of Equity Securities.

The information provided in response to Item 1.01 of this Report is incorporated by reference into this Item 3.02. The Securities were issued in a private placement pursuant to the exemption from the registration requirements of the Securities Act of 1933, as amended (the "Securities Act"), available under Section 4(a)(2) and/or Rule 506(b) of Regulation D promulgated pursuant to the Securities Act. The Purchaser represented that it was an accredited investor, as defined in Rule 501 of Regulation D, and that it was acquiring the securities for its own account, not as nominee or agent, and not with a view to the resale or distribution of any part thereof in violation of the Act. A description of the Series A Preferred and the Warrant under Item 1.01 of this Report on Form 8-K is incorporated by reference herein. The form of Warrant is filed as an exhibit to this Report on Form 8-K and is incorporated by reference herein.

Item 3.03. Material Modification to Rights of Security Holders.

The information set forth in Items 1.01 and 5.03 of this Current Report on Form 8-K is hereby incorporated by reference into this Item 3.03.

Item 5.03. Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year.

On August 3, 2022, the Company filed the Certificate of Designation with the office of the Secretary of State of the State of Delaware, designating 3,000 shares of the Company's authorized preferred stock as the Series A Preferred. In connection with the transaction described in Item 1.01 above, on August 3, 2022, the Company issued an aggregate of 3,000 shares of Series A Preferred. The disclosure required by this Item and included in Item 1.01 of this Current Report on Form 8-K, including a summary of the material provisions of the Certificate of Designation governing the Series A Preferred, is incorporated by reference from the information set forth in Item 1.01 above.

The foregoing descriptions of the Certificate of Designation and Series A Preferred do not purport to be complete and are qualified in their entirety by reference to the Certificate of Designation, which is filed as Exhibit 3.1 to this Current Report on Form 8-K and is incorporated by reference herein.

There is no established trading market for any of the Series A Preferred, and the Company does not expect a market to develop. The Company does not intend to apply for a listing for any of the Series A Preferred on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Series A Preferred will be limited.

Item 8.01 Other Events.

Date of Special Meeting of Stockholders; Record Date

The Board has determined that the Special Meeting will be held virtually on September 23, 2022, at 10:00 a.m. Pacific Time. Additional information concerning the Special Meeting will be included in the Company's definitive proxy statement to be filed with the Commission.

The Company has declared a record date of the close of business on August 5, 2022, for determining the stockholders of record who are entitled to notice of and to vote at the Special Meeting.

Item 9.01 Financial Statement and Exhibits.

(d) Exhibits.

Exhibit No.	Description
3.1	<u>Certificate of Designation of Preferences, Rights, and Limitations of Series A Convertible Preferred Stock.</u>
4.1	<u>Common Stock Purchase Warrant, dated August 3, 2022.</u>
10.1	<u>Securities Purchase Agreement, dated August 3, 2022, between AcclRx Pharmaceuticals, Inc. and Lincoln Park Capital Fund, LLC.</u>
10.2	<u>Registration Rights Agreement, dated August 3, 2022, between AcclRx Pharmaceuticals, Inc. and Lincoln Park Capital Fund, LLC.</u>
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

Additional Information and Where to Find It

The reverse stock split Proposal described above will be submitted to the Company's stockholders for their consideration at the Special Meeting. The Company intends to file a definitive proxy statement (the "Proxy Statement") that will be sent to holders of record of the Company's Common Stock and Series A Preferred as of the record date for the Special Meeting in connection with the Proposal and the other proposals to be considered at the Special Meeting. This Current Report on Form 8-K does not contain all the information that should be considered concerning the Proposal and is not intended to form the basis of any investment decision or any other decision in respect of the Proposal. The Company's stockholders and other interested persons are advised to read, when available, the definitive Proxy Statement and other documents filed in connection with the Special Meeting, as these materials will contain important information about the Company, the Proposal and the other proposals to be considered at the Special Meeting. When available, the definitive Proxy Statement and other relevant materials will be mailed to stockholders of the Company as of the record date for the Special Meeting. The Company's stockholders will also be able to obtain copies of the Proxy Statement and other documents filed with the Commission, without charge, once available, at the Commission's website at www.sec.gov, or by directing a request to the Company's corporate secretary c/o AcclRx Pharmaceuticals, Inc., 25821 Industrial Boulevard, Suite 400, Hayward, CA 94545.

Participants in Solicitation

The Company and its directors and executive officers may be deemed participants in the solicitation of proxies from the Company's stockholders with respect to the Proposal and the other proposals to be considered at the Special Meeting. A list of the names of those directors and executive officers and a description of their interests in the Company is contained in the Company's Annual Report for the year ended December 31, 2021 on Form 10-K, as amended, which was filed with the Commission and is available free of charge at the Commission's web site at www.sec.gov. Additional information regarding the interests of such participants will be contained in the definitive Proxy Statement relating to the Special Meeting, which will be filed with the Commission and which will be available free of charge at the Commission's web site at www.sec.gov. To the extent such holdings of the Company's securities may have changed since that time, such changes have been or will be reflected on Statements of Change in Ownership on Form 4 filed with the Commission.

Appointment of Proxy Solicitor & Participants in Solicitation

The Company intends to engage Innisfree M&A Incorporated ("Innisfree") to assist it with the solicitation of proxies in connection with the Special Meeting. The Company expects to pay Innisfree a fee of \$12,500, plus out-of-pocket expenses.

Forward Looking Statements

This Current Report on Form 8-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, that are subject to risks, uncertainties and other factors, including uncertainties relating to the Special Meeting and the proposals to be considered at the Special Meeting. Such risks and uncertainties include, among others, the failure to obtain stockholder approval for the reverse stock split Proposal and the other risks, uncertainties and factors detailed in the Company's filings with the Commission, including in the Company's Annual Report for the year ended December 31, 2021, and subsequent filings with the Commission. As a result of such risks, uncertainties and factors, the Company's actual results may differ materially from any future results, performance or achievements discussed in or implied by the forward-looking statements contained herein. You should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and except as may be required by applicable law, the Company undertakes no obligation to update or release publicly the results of any revisions to these forward-looking statements or to reflect events or circumstances arising after the date of this Current Report. Certain risks, uncertainties and other factors relating to the Company's business are described in greater detail in the Company's filings from time to time with the Commission, including its Annual Report on Form 10-K for the year ended December 31, 2021 and subsequent filings with the Commission, which the Company strongly urges you to read and consider, all of which are available free of charge on the Commission's web site at <http://www.sec.gov>.

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.

ACELRX PHARMACEUTICALS, INC.

Dated: August 4, 2022

By: /s/ RAFFI ASADORIAN
Name: Raffi Asadorian
Title: Chief Financial Officer

ACELRX PHARMACEUTICALS, INC.
CERTIFICATE OF DESIGNATION OF PREFERENCES,
RIGHTS AND LIMITATIONS
OF
SERIES A PREFERRED STOCK

PURSUANT TO SECTION 151 OF THE
DELAWARE GENERAL CORPORATION LAW

The undersigned, Vincent J. Angotti, does hereby certify that:

1. Vincent J. Angotti is the Chief Executive Officer of AcelRx Pharmaceuticals, Inc., a Delaware corporation (the "Corporation").
2. The Corporation is authorized to issue 10,000,000 shares of preferred stock, \$0.001 par value per share.
3. The following resolutions were duly adopted by the board of directors of the Corporation (the "Board of Directors"):

WHEREAS, the certificate of incorporation of the Corporation, as amended (the "Certificate of Incorporation"), provides for a class of its authorized stock known as preferred stock, consisting of 10,000,000 shares, \$0.001 par value per share, issuable from time to time in one or more series;

WHEREAS, the Board of Directors is authorized to determine and fix the dividend rights, dividend rate, voting rights, conversion rights, rights and terms of redemption and liquidation preferences of any wholly unissued series of preferred stock and the number of shares constituting any series and the designation thereof; and

WHEREAS, it is the desire of the Board of Directors, pursuant to its authority as aforesaid, to fix the rights, preferences, restrictions and other matters relating to a series of the preferred stock having a par value of \$0.001 per share, designated as Series A Convertible Preferred Stock (the "Series A Preferred Stock"), which shall consist of 3,000 shares of the preferred stock (the "Preferred Stock"), which the Corporation has the authority to issue, as follows:

NOW, THEREFORE, BE IT RESOLVED that, pursuant to the authority granted to and vested in the Board of Directors in accordance with applicable law and the provisions of the Certificate of Incorporation, the Board of Directors hereby creates, authorizes and provides for 3,000 shares of the Corporation's authorized Preferred Stock to be designated and issued as the "Series A Convertible Preferred Stock," having the relative rights, powers, preferences and limitations that are set forth as follows:

Section 1. Definitions. For the purposes hereof, the following terms shall have the following meanings:

"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 of the Securities Act.

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

"Certificate of Designation" shall mean this Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock.

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

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

“Common Stock Equivalents” means any securities of the Corporation or its subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, Preferred Stock, rights, options, warrants 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.

“Conversion Shares” means the shares of Common Stock issuable upon conversion of the shares of Series A Preferred Stock in accordance with the terms hereof.

“Conversion Shares Registration Statement” means the registration statement(s) that registers the resale of all Conversion Shares of the Holders, who shall be named as “selling stockholders” therein and meets the requirements set forth in the Registration Rights Agreement.

“Delisting Event” is deemed to occur when, after the Original Issue Date, the shares of Common Stock are no longer listed on a Trading Market.

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

“Holder” shall mean each of the holders of the Series A Preferred Stock.

“Original Issue Date” means the date of the first issuance of any shares of Series A Preferred Stock.

“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.

“Proposal” means the proposal submitted by the Board of Directors to the stockholders of the Corporation to adopt and approve an amendment to the Certificate of Incorporation to effect the Reverse Stock Split.

“Registration Rights Agreement” means the Registration Rights Agreement, dated as of the date of the Securities Purchase Agreement among the Corporation and the original Holders, as amended, modified, or supplemented from time to time in accordance with its terms.

“Requisite Holders” means the holders of at least a majority in voting power of the outstanding shares of Series A Preferred Stock.

“Reverse Stock Split” means a reverse stock split of the outstanding shares of Common Stock at the ratio set forth in the Proposal that is to be effected by the filing and effectiveness of a certificate of amendment to the Certificate of Incorporation with the Secretary of State of the State of Delaware.

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

“Securities Purchase Agreement” means the Securities Purchase Agreement entered into by and between the Corporation and the Holders on or about the Original Issue Date for the purchase of the Series A Preferred Stock.

“Trading Day” means a day on which the principal Trading Market is open for business.

“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 or the New York Stock Exchange (or any successors to any of the foregoing).

“Transfer Agent” means Computershare Trust Company, N.A., the current transfer agent of the Corporation, with a mailing address of 250 Royall St., Canton, MA 02021, and any successor transfer agent of the Corporation.

“Warrants” means, collectively, the Common Stock purchase warrants delivered to the Holder(s) at the Closing in accordance with the Securities Purchase Agreement, which Warrants shall have a term of exercise equal to five and one half (5.5) years from the date of issuance, in the form attached to the Securities Purchase Agreement.

Section 2. Designation, Amount and Par Value. The series of Preferred Stock shall be designated as Series A Preferred Stock and the number of shares so designated shall be 3,000 (which shall not be subject to increase without the written consent of the Requisite Holders). Each share of Series A Preferred Stock shall have a par value of \$0.001 per share and a stated value equal to \$100.00 per share (the “Stated Value”). Unless otherwise determined by the Board of Directors, the shares of Series A Preferred Stock shall be uncertificated and issued and maintained in electronic book-entry form.

Section 3. Dividends. Except for stock dividends or distributions for which adjustments are to be made pursuant to Section 8, Holders shall be entitled to receive, and the Corporation shall pay, dividends on shares of Series A Preferred Stock equal (on an as-converted to Common Stock basis, disregarding for such purpose any conversion limitations hereunder) to and in the same form as dividends actually paid on shares of the Common Stock when, as and if such dividends are paid on shares of the Common Stock. No other dividends shall be paid on shares of Series A Preferred Stock, subject to and in accordance with Section 8 below. The Corporation shall not pay any dividends on the Common Stock unless the Corporation simultaneously complies with this provision.

Section 4. Voting Rights.

a) Except as otherwise provided herein or as otherwise required by law, the Series A Preferred Stock shall have no voting rights. Each share of Series A Preferred Stock shall entitle the holder thereof (i) to vote exclusively on the Proposal and any proposal to adjourn any meeting of stockholders called for the purpose of voting on the Proposal (and the Series A Preferred Stock shall not be entitled to vote on any other matter except to the extent required under the General Corporation Law of the State of Delaware) and (ii) to 1,000,000 votes per each share of Series A Preferred Stock and shall, except as required by law, vote together with the Common Stock and any other issued and outstanding shares of Preferred Stock of the Corporation entitled to vote, as a single class; provided, however, that such shares of Series A Preferred Stock shall, to the extent cast on the Proposal, be automatically and without further action of the Holders voted in the same proportion as shares of Common Stock (excluding any shares of Common Stock that are not voted) and any other issued and outstanding shares of Preferred Stock of the Corporation entitled to vote (other than this Series A Preferred Stock or shares of such Preferred Stock not voted) are voted on the Proposal and any proposal to adjourn any meeting of stockholders called for the purpose of voting on the Proposal. Notwithstanding the provisions set forth in this Section 4, as long as any shares of Series A Preferred Stock are outstanding, the Corporation shall not, without the affirmative vote of the Requisite Holders, (a) alter or change adversely the powers, preferences or rights given to the Series A Preferred Stock or alter or amend this Certificate of Designation, (b) issue additional shares of Series A Preferred Stock, or (c) enter into any agreement with respect to any of the foregoing.

Section 5. Liquidation.

a) (i) Upon any liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary (a “Liquidation”), the Holders of the Series A Preferred Stock then outstanding shall be entitled to be paid in cash an amount per share of Series A Preferred Stock equal to one hundred and ten percent (110%) of the Stated Value (the “Liquidation Amount”), or (ii) in the event of a Deemed Liquidation Event (as defined below), the Holders of the Series A Preferred Stock then outstanding shall be entitled to be paid out of the consideration payable to stockholders in such Deemed Liquidation Event or out of the Available Proceeds (as defined below), as applicable, in each case before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share of Series A Preferred Stock equal to the Liquidation Amount. After the payment to the Holders of the Series A Preferred Stock of all amounts distributable pursuant to this Section 5, the Holders of outstanding shares of Series A Preferred Stock will have no right or claim, based on their ownership of shares of Series A Preferred Stock, to any of the remaining assets of the Corporation by reason of their ownership of Series A Preferred Stock. For the avoidance of doubt, any remaining assets available for distribution to the stockholders of the Corporation after payment in full of the Liquidation Amount, or in the case of a Deemed Liquidation Event, the consideration not payable to the Holders of Series A Preferred Stock as set forth above or the remaining Available Proceeds, as the case may be, shall be distributed among the holders of shares of Common Stock, pro rata based on the number of shares held by each such holder. If upon any such Liquidation or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the Holders of shares of Series A Preferred Stock the full amount to which they shall be entitled under this Section 5, the Holders of shares of Series A Preferred Stock shall share ratably and on a *pari passu* basis in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

b) Deemed Liquidation Events.

i. Definition. Each of the following events shall be considered a “Deemed Liquidation Event”:

(a) a merger or consolidation in which:

(i) the Corporation is a constituent party; or

(ii) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation,

except that a Deemed Liquidation Event shall not include any such merger or consolidation involving the Corporation or a subsidiary in which the shares of capital stock of the Corporation outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, at least a majority, by voting power, of the capital stock of (1) the surviving or resulting corporation; or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation; or

(b) (1) the sale, lease, transfer, or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation of all or substantially all the assets of the Corporation and its subsidiaries taken as a whole, or (2) the sale or disposition (whether by merger, consolidation or otherwise, and whether in a single transaction or a series of related transactions) of one (1) or more subsidiaries of the Corporation if substantially all of the assets of the Corporation and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, or other disposition is to a wholly owned subsidiary of the Corporation.

ii. Effecting a Deemed Liquidation Event.

(a) The Corporation shall not have the power to effect a Deemed Liquidation Event referred to in Section 5(b)(i)(a) (i) unless the agreement or plan of merger or consolidation for such transaction (the “Merger Agreement”) provides that the consideration payable to the stockholders of the Corporation in such Deemed Liquidation Event shall be allocated to the holders of capital stock of the Corporation in accordance with this Section 5.

(b) In the event of a Deemed Liquidation Event referred to in Section 5(b)(i)(a)(ii) or Section 5(b)(i)(b), if the Corporation does not effect a dissolution of the Corporation under the General Corporation Law within ninety (90) days after such Deemed Liquidation Event, then (i) the Corporation shall send a written notice to each Holder of the Series A Preferred Stock no later than the ninetieth (90th) day after the Deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause (ii) to require the redemption of such shares of Series A Preferred Stock, and (ii) if the Requisite Holders so request in a written instrument delivered to the Corporation (or via e-mail) not later than one hundred twenty (120) days after such Deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by the Board of Directors of the Corporation), together with any other assets of the Corporation available for distribution to its stockholders, all to the extent permitted by Delaware law (the “Available Proceeds”), on the one hundred fiftieth (150th) day after the effective time of such Deemed Liquidation Event, to redeem, on a *pari passu* basis, all outstanding shares of Series A Preferred Stock at a price per share equal to the applicable Liquidation Amount. Notwithstanding the foregoing, in the event of a redemption pursuant to the preceding sentence, if the Available Proceeds are not sufficient to redeem all outstanding shares of Series A Preferred Stock, the Corporation shall redeem a pro rata portion of each holder’s shares of Series A Preferred Stock to the fullest extent of such Available Proceeds, based on the respective amounts which would otherwise be payable in respect of the shares to be redeemed if the Available Proceeds were sufficient to redeem all such shares, and shall redeem the remaining shares as soon as it may lawfully do so under Delaware law.

iii. Amount Deemed Paid or Distributed. The amount deemed paid or distributed to the holders of capital stock of the Corporation upon any such merger, consolidation, sale, transfer, other disposition or redemption shall be the cash or the value of the property, rights or securities to be paid or distributed to such holders pursuant to such Deemed Liquidation Event. The value of such property, rights or securities shall be determined in good faith by the Board of Directors of the Corporation.

Section 6. Conversion.

a) Conversions at Option of Holder. Each share of Series A Preferred Stock shall be convertible, at any time and from time to time from and after the date of the Reverse Stock Split at the option of the Holder thereof, into that number of shares of Common Stock (subject to the limitations set forth in Sections 6(d) and 6(e)) determined by dividing the Stated Value of such share of Series A Preferred Stock by the Conversion Price (as defined below) then in effect, rounded down to the nearest whole share (with cash paid in lieu of any fractional shares pursuant to Section 6(c)(vi)). Holders shall effect conversions by providing the Corporation with the form of conversion notice attached hereto as Annex A (a “Notice of Conversion”). Each Notice of Conversion shall specify the number of shares of Series A Preferred Stock to be converted, the number of shares of Series A Preferred Stock owned prior to the conversion at issue, the number of shares of Series A Preferred Stock owned subsequent to the conversion at issue and the date on which such conversion is to be effected, which date may not be prior to the date the applicable Holder delivers, by e-mail or any other method by which notice may be given, Notice of Conversion to the Corporation (such date, the “Conversion Date”). Upon delivery of the Notice of Conversion, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Conversion Shares with respect to which the shares of Series A Preferred Stock have been converted irrespective of the date of delivery of the Conversion Shares. If no Conversion Date is specified in a Notice of Conversion, the Conversion Date shall be the date that such Notice of Conversion to the Corporation is deemed delivered hereunder. No ink original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Conversion form be required. The calculations and entries in the Notice of Conversion shall control in the absence of manifest or mathematical error. To effect conversion of shares of Series A Preferred Stock, a Holder shall not be required to surrender the book-entry statement(s) evidencing such shares of Series A Preferred Stock to the Corporation.

b) Conversion Price. The conversion price per Conversion Share for the Series A Preferred Stock shall equal, with respect to any Conversion Date on which shares of Series A Preferred Stock are being converted pursuant to this Section 6, ninety percent (90%) of the lesser of (i) the closing sale price of the Corporation’s Common Stock on the Trading Day immediately prior to the Original Issue Date and (ii) the average of the closing sale prices for the Common Stock on the five (5) Trading Days immediately prior to the Original Issue Date, subject to adjustment as provided herein (the “Conversion Price”); *provided*, that the Conversion Price shall not fall below the par value per share of the Common Stock and shall not exceed thirty-five cents (\$0.35) per share, in each case, as adjusted to give effect to the Reverse Stock Split.

c) Mechanics of Conversion.

i. Delivery of Conversion Shares Upon Conversion. Promptly after each Conversion Date but in any case within the earlier of (i) two (2) Trading Days and (ii) the Standard Settlement Period (as defined below) thereof (the “Share Delivery Date”), the Corporation shall deliver, or cause to be delivered, to the converting Holder the number of Conversion Shares being acquired upon the conversion of the Series A Preferred Stock, which Conversion Shares shall be issued free of restrictive legends and trading restrictions, except as required by applicable law, and a wire transfer of immediately available funds for cash in lieu of any fractional shares (calculated in accordance with the provisions of Section 6(c)(vi)), plus the amount of accrued and unpaid dividends, if any. Conversion Shares issuable hereunder shall 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 (“DTC”) through its Deposit or Withdrawal at Custodian system (“DWAC”) if the Transfer Agent is then a participant in the DTC Fast Automated Securities Transfer Program, or otherwise by physical delivery of a book-entry statement(s), registered in the name of the Holder or its designee, for the number of Conversion Shares to which the Holder is entitled pursuant to such conversion to the address specified by the Holder in the Notice of Conversion. If the number of shares of Series A Preferred Stock to be converted pursuant to the applicable Notice of Conversion is less than the number of shares of Series A Preferred Stock owned by the Holder immediately prior to the conversion effected pursuant to the applicable Notice of Conversion, then the Corporation shall, at its own expense, deliver (or cause its Transfer Agent to deliver) to the converting Holder a new book-entry statement, registered in the name of the Holder or its designee, evidencing the number of shares of Series A Preferred Stock equal to (x) the number of shares of Series A Preferred Stock owned by the Holder immediately prior to the conversion effected pursuant to the applicable Notice of Conversion, less (y) the number of shares of Series A Preferred Stock converted pursuant to the applicable Notice of Conversion. The Corporation agrees to maintain a transfer agent that is a participant in the DTC Fast Automated Securities Transfer Program so long as any shares of Series A Preferred Stock remain outstanding. As used herein, “Standard Settlement Period” means the standard settlement period, expressed in a number of Trading Days, on the Corporation’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Conversion.

ii. Failure to Deliver Conversion Shares. If, in the case of any Notice of Conversion, such Conversion Shares are not delivered to or as directed by the applicable Holder by the Share Delivery Date, the Holder shall, to the fullest extent permitted by law, be entitled to elect by written notice to the Corporation at any time on or before its receipt of such Conversion Shares, to rescind such conversion pursuant to the applicable Notice of Conversion and (i) the Holder shall promptly return to the Corporation the Conversion Shares issued to such Holder pursuant to the rescinded Notice of Conversion and (ii) the Corporation shall, at its own expense, deliver (or cause its Transfer Agent to deliver) to the converting Holder a new book-entry statement, registered in the name of the Holder or its designee, evidencing the number of shares of Series A Preferred Stock owned by the Holder immediately prior to the conversion pursuant to the applicable Notice of Conversion.

iii. Obligation Absolute. The Corporation’s obligation to issue and deliver the Conversion Shares upon conversion of Series A Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by a Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by such Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by such Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to such Holder in connection with the issuance of such Conversion Shares; provided, however, that such delivery shall not operate as a waiver by the Corporation of any such action that the Corporation may have against such Holder. In the event a Holder shall elect to convert any or all of its Series A Preferred Stock, the Corporation may not refuse conversion based on any claim that such Holder or any Person associated or affiliated with such Holder has been engaged in any violation of law, agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and/or enjoining conversion of all or part of the Series A Preferred Stock of such Holder shall have been sought and obtained, and the Corporation posts a surety bond for the benefit of such Holder in the amount of 150% of the Stated Value of Series A Preferred Stock which is subject to the injunction, which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to such Holder to the extent it obtains judgment in its favor. In the absence of such injunction, the Corporation shall issue Conversion Shares and, if applicable, cash, upon a properly noticed conversion. To the maximum extent permitted by applicable law, nothing herein shall limit a Holder’s right to pursue actual damages for the Corporation’s failure to deliver Conversion Shares within the period specified herein and such Holder shall have the right to pursue all remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief. To the maximum extent permitted by applicable law, the exercise of any such rights shall not prohibit a Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

iv. Compensation for Buy-In on Failure to Timely Deliver Conversion Shares Upon Conversion. In addition to any other rights available to the Holder, if the Corporation fails for any reason to deliver to a Holder the applicable Conversion Shares by the Share Delivery Date pursuant to Section 6(c)(i), and if after such Share Delivery Date such Holder is required by its brokerage firm 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 such Holder of the Conversion Shares which such Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "Buy-In"), then the Corporation shall (A) pay in cash to such Holder (in addition to any other remedies available to or elected by such Holder) the amount, if any, by which (x) such Holder's total purchase price (including any brokerage commissions) for the Common Stock so purchased exceeds (y) the product of (1) the aggregate number of shares of Common Stock that such Holder was entitled to receive from the conversion at issue multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) at the option of such Holder, either reissue (if surrendered) the shares of Series A Preferred Stock equal to the number of shares of Series A Preferred Stock submitted for conversion (in which case, such conversion shall be deemed rescinded) or deliver to such Holder the number of shares of Common Stock that would have been issued if the Corporation had timely complied with its delivery requirements under Section 6(c)(i). For example, if a Holder purchases shares of Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted conversion of shares of Series A Preferred Stock with respect to which the actual sale price of the Conversion Shares (including any brokerage commissions) giving rise to such purchase obligation was a total of \$10,000 under clause (A) of the immediately preceding sentence, the Corporation shall be required to pay such Holder \$1,000. The Holder shall provide the Corporation written notice indicating the amounts payable to such Holder in respect of the Buy-In and, upon request of the Corporation, evidence of the amount of such loss. To the maximum extent permitted by applicable law, 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 Corporation's failure to timely deliver the Conversion Shares upon conversion of the shares of Series A Preferred Stock as required pursuant to the terms hereof.

v. Reservation of Shares Issuable Upon Conversion. From and after the date of effectiveness of the Reverse Stock Split, the Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Series A Preferred Stock, each as herein provided, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holder (and the other holders of the Series A Preferred Stock), not less than such aggregate number of shares of the Common Stock as shall be issuable (taking into account the adjustments and restrictions of Section 8) upon the conversion of the then outstanding shares of Series A Preferred Stock and payment of dividends hereunder. The Corporation covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable and, if the Conversion Shares Registration Statement is then effective under the Securities Act, shall be registered for public resale in accordance with such Conversion Shares Registration Statement (subject to such Holder's compliance with its obligations under the Registration Rights Agreement).

vi. Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the conversion of the Series A Preferred Stock. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Corporation shall pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Conversion Price.

vii. Transfer Taxes and Expenses. The issuance of Conversion Shares on conversion of this Series A Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such Conversion Shares, all of which taxes shall be paid by the Corporation, and such Conversion Shares shall be issued in the name of such Holder or in such name or names as may be directed by such Holder, provided that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such Conversion Shares upon conversion in a name other than that of the Holders of such shares of Series A Preferred Stock and the Corporation shall not be required to issue or deliver such Conversion Shares unless or until the Person or Persons requesting the issuance thereof shall have paid to the Corporation the amount of such tax or shall have established to the satisfaction of the Corporation that such tax has been paid. The Corporation shall pay all Transfer Agent fees required for same-day processing of any Notice of Conversion and all fees to DTC (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Conversion Shares.

viii. Registration; Book-Entry. The Corporation or its Transfer Agent shall maintain a register (the “Register”) for the recordation of the names and addresses of the Holders of each share of Series A Preferred Stock and the Stated Value of such shares.

Each Holder and the Corporation shall maintain records showing the shares of Series A Preferred Stock converted and the dates of such conversions or shall use such other method, reasonably satisfactory to such Holder and the Corporation, so as not to require physical surrender of a book-entry statement upon conversion. If the Corporation or its Transfer Agent, as applicable, does not update the Register to record such conversion of shares of Series A Preferred Stock and the dates of such conversions within two (2) Business Days of such occurrence, then the Register shall be automatically deemed updated to reflect such occurrence.

ix. Pro Rata Conversion; Disputes. In the event that the Corporation receives a Conversion Notice from more than one Holder for the same Conversion Date and the Corporation can convert some, but not all, of such Series A Preferred Stock submitted for conversion, the Corporation shall convert from each Holder electing to have Series A Preferred Stock converted on such date a pro rata amount of such Holder’s shares of Series A Preferred Stock submitted for conversion on such date based on the number of Shares of Series A Preferred Stock submitted for conversion on such date by such Holder relative to the aggregate number of shares of Series A Preferred Stock submitted for conversion on such date. In the event of a dispute as to the number of Conversion Shares issuable to a Holder in connection with a conversion of Series A Preferred Stock, the Corporation shall issue to such Holder the number of Conversion Shares not in dispute and use commercially reasonable efforts to resolve such dispute with such Holder.

d) Beneficial Ownership Limitation. The Corporation shall not effect any conversion of the Series A Preferred Stock, and a Holder shall not have the right to convert any portion of the Series A Preferred Stock, to the extent that, after giving effect to the conversion set forth on the applicable Notice of Conversion, such Holder (together with such Holder’s Affiliates, and any Persons acting as a group together with such Holder or any of such 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 such Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon conversion of the Series A Preferred Stock with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which are issuable upon (i) conversion of the remaining, unconverted shares of the Series A Preferred Stock beneficially owned by such 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 Corporation subject to a limitation on conversion or exercise analogous to the limitation contained herein (including, without limitation, the Series A Preferred Stock or the Warrants) beneficially owned by such Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 6(d), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. To the extent that the limitation contained in this Section 6(d) applies, the determination of whether the Series A Preferred Stock is convertible (in relation to other securities owned by such Holder together with any Affiliates and Attribution Parties) and of how many shares of Series A Preferred Stock are convertible shall be in the sole discretion of such Holder, and the submission of a Notice of Conversion shall be deemed to be such Holder’s determination of whether the shares of Series A Preferred Stock may be converted (in relation to other securities owned by such Holder together with any Affiliates and Attribution Parties) and how many shares of the Series A Preferred Stock are convertible, in each case subject to the Beneficial Ownership Limitation. To ensure compliance with this restriction, each Holder will be deemed to represent to the Corporation each time it delivers a Notice of Conversion that such Notice of Conversion has not violated the restrictions set forth in this paragraph and the Corporation 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. The Holder understands and acknowledges that the Corporation is not representing to the Holder that the calculations and determinations set forth in this Section 6(d) are 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. For purposes of this Section 6(d), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as stated in the most recent of the following: (i) the Corporation’s most recent periodic or annual report filed with the Commission, as the case may be, (ii) a more recent public announcement by the Corporation or (iii) a more recent written notice by the Corporation or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written request of a Holder (which may be via e-mail), the Corporation shall within one Trading Day confirm orally and in writing or by email to such 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 Corporation, including the Series A Preferred Stock by such 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 the election by a Holder prior to the issuance of any shares of Series A Preferred Stock, 9.99%) of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of Series A Preferred Stock and Warrants, if any, held by the applicable Holder. A Holder, upon notice to the Corporation, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 6(d) applicable to its Series A Preferred Stock provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon conversion of the Series A Preferred Stock and Warrants held by Holder, if any, and the provisions of this Section 6(d) shall continue to apply. Any such increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Corporation and shall only apply to such Holder and no other Holder. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 6(d) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation contained herein 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 Series A Preferred Stock.

e) Nasdaq Issuance Limitation. Notwithstanding anything herein to the contrary, the Corporation shall not be obligated to issue any shares of Common Stock, and the Holders shall not have the right to receive, upon conversion, exercise or redemption of the Series A Preferred Stock and Warrants, taken as a whole, any shares of Common Stock to the extent such issuance of shares of Common Stock would exceed that number of shares of Common Stock which the Corporation may issue in the aggregate pursuant to the transactions contemplated under the Securities Purchase Agreement (including pursuant to this Certificate of Designation and the Warrants) without breaching the Corporation's obligations under the rules and regulations of the Nasdaq Capital Markets (the "Exchange Cap"). In furtherance of the above, no holder of Series A Preferred Stock shall be issued, in the aggregate pursuant to the terms of this Certificate of Designation and the Warrants, shares of Common Stock in an amount greater than the product of the Exchange Cap multiplied by a fraction, the numerator of which is the original Stated Value of such Holder's Series A Preferred Stock and the denominator of which is the aggregate Stated Value of all Series A Preferred Stock issued on the Original Issue Date to all Holders (with respect to each Holder, the "Exchange Cap Allocation"). In the event that the Holder shall sell or otherwise transfer any of the Holder's Series A Preferred Stock, the transferee shall be allocated a pro rata portion of the Holder's Exchange Cap Allocation, and the restrictions of the prior sentence shall apply to such transferee with respect to the portion of the Exchange Cap Allocation allocated to such transferee. In the event that any holder of Series A Preferred Stock shall convert all of such holder's Series A Preferred Stock into a number of shares of Common Stock which, in the aggregate, is less than such holder's Exchange Cap Allocation, then the difference between such holder's Exchange Cap Allocation and the number of shares of Common Stock actually issued to such holder shall be allocated to the respective Exchange Cap Allocations of the remaining holders of Series A Preferred Stock on a pro rata basis in proportion to the shares of Series A Preferred Stock then held by each such Holder.

Section 7. Redemption.

a) Redemption by the Corporation. To the maximum extent permitted by Delaware law, beginning on the date of the Reverse Stock Split, the Corporation may, at any time during the 15 Business Days following the Reverse Stock Split (such period the "Company Redemption Period" and such redemption date, the "Corporation Redemption Date"), subject to the conversion provisions set forth in Section 6(a), redeem in cash all or any portion of the Series A Preferred Stock (without regard to the Beneficial Ownership Limitation) at a price per share equal to one hundred and five percent (105%) of the Stated Value (the "Corporation Redemption Price"). The Corporation shall send written notice (a "Corporation Redemption Request") of any redemption pursuant to this Section 7(a) to each Holder of record of any shares of Series A Preferred Stock to be redeemed, not more than 30 days nor less than 5 days prior to the Corporation Redemption Date. Such Corporation Redemption Request shall set forth in reasonable detail (i) the Corporation Redemption Date, (ii) the number of shares of Series A Preferred Stock held by the Holder that the Corporation will redeem on such Corporation Redemption Date, and (iii) a calculation specifying the amount owed to such Holder by the Corporation with respect to the shares of Series A Preferred Stock to be redeemed. A Corporation Redemption Request shall not be effective if received by the Holder before the date of the Reverse Stock Split. If, on a Corporation Redemption Date, Delaware law prevents the Corporation from redeeming all shares of Series A Preferred Stock scheduled to be redeemed, the Corporation shall ratably redeem the maximum number of shares that it may redeem consistent with such law, and shall redeem the remaining shares as soon as it may lawfully do so under such law. Notwithstanding the provisions set forth in this Section 7(a), if the Corporation receives a Holder Redemption Request pursuant to Section 7(b), the Corporation shall no longer be permitted to redeem any portion of the Series A Preferred Stock covered by such Holder Redemption Request pursuant this Section 7(a).

b) Holder Redemption. To the maximum extent permitted by Delaware law, beginning on the day following the expiration of the Company Redemption Period, each Holder of Series A Preferred Stock may cause the Corporation at any time and from time to time (such date, the “Holder Redemption Date”) to redeem in cash all or any portion of the Series A Preferred Stock held by such Holder (without regard to the Beneficial Ownership Limitation) at a price per share equal to one hundred and ten percent (110%) of the Stated Value (the “Holder Redemption Price”). Each holder of record of any shares of Series A Preferred Stock seeking redemption shall send written notice (a “Holder Redemption Request”) of any redemption pursuant to this Section 7(b) to the Corporation, not more than 30 days nor less than 5 days prior to the Holder Redemption Date. Such Holder Redemption Request shall set forth in reasonable detail (i) the Holder Redemption Date, (ii) the number of shares of Series A Preferred Stock held by the holder that the Corporation will redeem on such Holder Redemption Date, and (iii) a calculation specifying the amount owed to such Holder by the Corporation with respect to the shares of Series A Preferred Stock to be redeemed. A Holder Redemption Request shall not be effective if received by the Corporation less than 5 days after the date of the Reverse Stock Split. If on the Holder Redemption Date, Delaware law prevents the Corporation from redeeming all shares of Series A Preferred Stock scheduled to be redeemed, the Corporation shall ratably redeem the maximum number of shares that it may redeem consistent with such law, and shall redeem the remaining shares as soon as it may lawfully do so under such law. Notwithstanding the provisions set forth in this Section 7(b), if the Holder receives a Corporation Redemption Request pursuant to Section 7(a), the Holder shall no longer be permitted to redeem any portion of the Series A Preferred Stock covered by such Corporation Redemption Request pursuant this Section 7(b).

c) Automatic Redemption. To the maximum extent permitted by Delaware law, upon a Delisting Event (such date, the “Automatic Redemption Date”), subject to the conversion provisions set forth in Section 6(a), the Series A Preferred Stock held by each Holder of record shall be automatically redeemed at a price per share equal to one hundred and ten percent (110%) of the Stated Value (the “Automatic Redemption Price”). The Corporation shall send written notice (an “Automatic Redemption Notice”) of any redemption pursuant to this Section 7(c) to each Holder of record of any shares of Series A Preferred Stock within 5 Business Days following such Delisting Event. Such Automatic Redemption Notice shall set forth in reasonable detail (i) the Automatic Redemption Date, (ii) the number of shares of Series A Preferred Stock held by the Holder that the Corporation will redeem on such Automatic Redemption Date, and (iii) a calculation specifying the amount owed to such Holder by the Corporation with respect to the shares of Series A Preferred Stock to be redeemed. If, on an Automatic Redemption Date, Delaware law prevents the Corporation from redeeming all shares of Series A Preferred Stock scheduled to be redeemed, the Corporation shall ratably redeem the maximum number of shares that it may redeem consistent with such law, and shall redeem the remaining shares as soon as it may lawfully do so under such law.

d) Rights Subsequent to Redemption. If on a Corporation Redemption Date, Holder Redemption Date or Automatic Redemption Date, as applicable (each, a “Redemption Date”), the Corporation Redemption Price, Holder Redemption Price or Automatic Redemption Price, as applicable (each, a “Redemption Price”), payable upon redemption of the shares of Series A Preferred Stock to be redeemed on such Redemption Date is paid or tendered for payment or deposited with an independent payment agent so as to be available therefor in a timely manner, then all rights with respect to such shares shall forthwith after the Redemption Date terminate, except only the right of the holders to receive the Redemption Price without interest.

Section 8. Certain Adjustments.

a) Stock Dividends and Stock Splits. If the Corporation, at any time while the Series A Preferred Stock is outstanding: (i) pays a stock dividend or otherwise makes a distribution that is payable in shares of Common Stock on shares of Common Stock or any other Common Stock Equivalents (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Corporation upon conversion of, or payment of a dividend on, this Series A Preferred Stock), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of a reverse stock split, including the Reverse Stock Split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues, in the event of a reclassification of shares of the Common Stock, any shares of capital stock of the Corporation, then the Conversion Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding any treasury shares of the Corporation) outstanding immediately before such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to this Section 8 shall become effective immediately after the effective date of the dividend, distribution, subdivision, combination or re-classification.

b) Calculations. All calculations under this Section 8 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 8, 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 any treasury shares of the Corporation) issued and outstanding.

c) Notice to the Holders.

i. Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 8, the Corporation shall promptly deliver to each Holder, by email or any other method by which notice may be given, a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment, provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the adjustment required to be specified in such notice.

ii. Notice to Allow Conversion by Holder. If (A) the Corporation shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Corporation shall declare a special nonrecurring cash dividend on the Common Stock or shall repurchase the Common Stock, (C) the Corporation shall authorize the granting to all holders of the Common Stock of 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 Corporation shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Corporation is a party, any sale or transfer of all or substantially all of the assets of the Corporation, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property or (E) the Corporation shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Corporation, then, in each case, the Corporation shall email to each Holder at its last email address as it shall appear upon the stock ledger of the Corporation, 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 the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange, provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Corporation or any of its subsidiaries, the Corporation shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to convert the Holder's shares of Series A Preferred Stock (or any part hereof) during the 10-day period commencing on the date of such notice through the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 9. Miscellaneous.

a) Governing Law. This Certificate of Designation shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of laws. In any action or proceeding between any of the parties arising out of or relating to this Certificate of Designation or any of the transactions contemplated by this Certificate of Designation, each of the parties: (a) irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Court of Chancery of the State of Delaware or, to the extent such court does not have subject matter jurisdiction, the United States District Court for the District of Delaware or, to the extent that neither of the foregoing courts has jurisdiction, the Superior Court of the State of Delaware; (b) agrees that all claims in respect of such action or proceeding shall be heard and determined exclusively in accordance with clause (a) of this Section 9(a); (c) waives any objection to laying venue in any such action or proceeding in such courts; (d) waives any objection that such courts are an inconvenient forum or do not have jurisdiction over any party; (e) agrees that service of process upon such party in any such action or proceeding shall be effective if notice is given in accordance with Section 9(a) of this Certificate of Designation; and (f) irrevocably and unconditionally waives the right to trial by jury. In any action at law or suit in equity to enforce this Certificate of Designation or the rights of any of the Parties, the prevailing party in such action or suit (as determined by a court of competent jurisdiction) shall be entitled to recover its reasonable out-of-pocket attorneys' fees and all other reasonable costs and expenses incurred in such action or suit.

b) Notices. Any and all notices or other communications or deliveries to be provided by the Holders shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at 25821 Industrial Boulevard, Suite 400, Hayward, California 94545, or such other e-mail address or address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 9. Any and all notices or other communications or deliveries to be provided by the Corporation 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 Corporation, or if no such e-mail address or address appears on the books of the Corporation, at the principal place of business of such Holder, as set forth in the Securities Purchase Agreement. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section 9 prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

c) Waiver. Any waiver by the Corporation or a Holder of a right or preference granted herein or a breach of any provision of this Certificate of Designation shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designation or a waiver by any other Holders. The failure of the Corporation or a Holder to insist upon strict adherence to any term of this Certificate of Designation on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designation on any other occasion. Any waiver by the Corporation or a Holder must be in writing.

d) Severability. If any provision of this Certificate of Designation is invalid, illegal or unenforceable, the balance of this Certificate of Designation shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances. If it shall be found that any interest or other amount deemed interest due hereunder violates the applicable law governing usury, the applicable rate of interest due hereunder shall automatically be lowered to equal the maximum rate of interest permitted under applicable law.

e) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

f) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designation and shall not be deemed to limit or affect any of the provisions hereof.

g) Status of Converted or Redeemed Series A Preferred Stock. If any shares of Series A Preferred Stock shall be converted, redeemed or reacquired by the Corporation, such shares shall resume the status of authorized but unissued shares of Preferred Stock and shall no longer be designated as Series A Preferred Stock.

RESOLVED, FURTHER, that any of the president and the secretary of the Corporation be and each hereby is authorized and directed to prepare and file this Certificate of Designation of Preferences, Rights and Limitations in accordance with the foregoing resolution and the provisions of Delaware law.

IN WITNESS WHEREOF, the undersigned have executed this Certificate of Designation this 3rd day of August, 2022.

/s/ Vincent J. Angotti

Name: Vincent J. Angotti

Title: Chief Executive Officer

ANNEX A

NOTICE OF CONVERSION

(TO BE EXECUTED BY THE REGISTERED HOLDER IN ORDER TO CONVERT SHARES OF SERIES C PREFERRED STOCK)

The undersigned hereby elects to convert the number of shares of Series A Convertible Preferred Stock indicated below into shares of common stock, par value \$0.001 per share (the "Common Stock"), of AcclRx Pharmaceuticals, Inc., a Delaware corporation (the "Corporation"), according to the conditions hereof, as of the date written below. If shares of Common Stock are to be issued in the name of a Person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto and is delivering herewith such certificates as may be required by the Corporation. No fee will be charged to the Holders for any conversion, except for any such transfer taxes.

Conversion calculations:

Date to Effect Conversion: _____

Number of shares of Series A Preferred Stock owned prior to Conversion: _____

Number of shares of Series A Preferred Stock to be Converted: _____

Stated Value of shares of Series A Preferred Stock to be Converted: _____

Number of shares of Common Stock to be Issued: _____

Applicable Conversion Price: _____

Number of shares of Preferred Stock subsequent to Conversion: _____

Address for Delivery: _____

or

DWAC Instructions:

Broker no: _____

Account no: _____

[HOLDER]

By: _____

Name:

Title:

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), OR UNDER APPLICABLE STATE SECURITIES OR BLUE SKY LAWS. THE SECURITIES ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE, AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. INVESTORS SHOULD BE AWARE THAT THEY MAY BE REQUIRED TO BEAR THE FINANCIAL RISKS OF THIS INVESTMENT FOR AN INDEFINITE PERIOD OF TIME. THIS SECURITY IS SUBJECT TO THE TRANSFER RESTRICTION SET FORTH HEREIN AND IN THE SECURITIES PURCHASE AGREEMENT, DATED AUGUST 3, 2022, AS AMENDED FROM TIME TO TIME, COPIES OF WHICH ARE AVAILABLE WITH THE SECRETARY OF THE COMPANY. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT WITH A REGISTERED BROKER-DEALER OR OTHER LOAN WITH A FINANCIAL INSTITUTION THAT IS AN “ACCREDITED INVESTOR” AS DEFINED IN RULE 501(A) UNDER THE SECURITIES ACT OR OTHER LOAN SECURED BY SUCH SECURITIES.

**COMMON STOCK PURCHASE WARRANT
ACELRX PHARMACEUTICALS, INC.**

Warrant Shares: 1,623,008

Issue Date: August 3, 2022

THIS COMMON STOCK PURCHASE WARRANT (the “Warrant”) certifies that, for value received, Lincoln Park Capital Fund, LLC or its assigns (the “Holder”) is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the “Initial Exercise Date”) and on or prior to 5:00 p.m. (New York City time) on February 3, 2028 (the “Termination Date”) but not thereafter, to subscribe for and purchase from AcelRx Pharmaceuticals, Inc., a Delaware corporation (the “Company”), up to 1,623,008 shares (as subject to adjustment hereunder, the “Warrant Shares”) of Common Stock. The purchase price of one share of the Company’s Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Securities Purchase Agreement (the “Purchase Agreement”), dated August 3, 2022, among the Company and the purchasers signatory thereto.

Section 2. Exercise.

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

b) Exercise Price. The exercise price per share of Common Stock under this Warrant shall be \$0.2033, subject to adjustment hereunder (the "Exercise Price").

c) Cashless Exercise. If at the time of exercise hereof, there is no effective registration statement registering, or no current prospectus available for, 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) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of "regular trading hours" (as defined in Rule 600(b) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder's execution of the applicable Notice of Exercise if such Notice of Exercise is executed during "regular trading hours" on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of "regular trading hours" on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of "regular trading hours" on such Trading Day;

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

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

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

“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 the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“Convertible Securities” means any evidence of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

“Options” means rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

“Exempt Issuance” shall mean the issuance of: (i) shares of Common Stock, Options or Convertible Securities to employees, officers, directors, consultants, advisors or independent contractors of the Company pursuant to any stock or option plan duly adopted for such purpose, by a majority of the non-employee members of the Board of Directors or a majority of the members of a committee of non-employee directors established for such purpose for services rendered to the Company; (ii) shares of Common Stock upon the exercise or exchange of or conversion of any Options or Convertible Securities issued and outstanding on the Closing Date, provided that such Options or Convertible Securities have not been amended since the Closing Date to (x) specifically increase the number of shares of Common Stock issuable thereunder, (y) to decrease the exercise price, exchange price or conversion price of such Options or Convertible Securities (other than in connection with stock splits or combinations) to an exercise price, exchange price or conversion price less than the Exercise Price, or (z) to extend the term of any such Options or Convertible Securities; (iii) securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities; (iv) shares of Common Stock, Options or Convertible Securities issued in connection with sponsored research, collaboration, technology license, development, OEM, marketing or other similar agreements or strategic partnerships approved by the Board of Directors; (v) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Section 3(a); (vi) shares of Common Stock issued upon conversion of shares of Series A Preferred Stock or the Warrants in accordance with the Transaction Documents; (vii) shares of Common Stock, Options or Convertible Securities issued to a Holder that is a Purchaser under the Purchase Agreement; and (viii) up to \$5,000,000 of shares of Common Stock (such amount, the “ATM Cap”) issued or sold pursuant to that certain Controlled Equity Offering Sales Agreement, dated June 21, 2016, by and between the Company and Cantor Fitzgerald & Co., as may be amended from time to time (the “ATM Agreement”).

“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 the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

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

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder’s or its designee’s balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system (“DWAC”) if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) the Warrant Shares are eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 (assuming cashless exercise of the Warrants), and otherwise by physical delivery of a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earliest of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise, (ii) one (1) Trading Day after delivery of the aggregate Exercise Price to the Company and (iii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the “Warrant Share Delivery Date”). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, “Standard Settlement Period” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

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

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

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

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

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

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

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

Section 3. Certain Adjustments.

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

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

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

d) 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 (and all of its Subsidiaries, taken as a whole), 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 (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a "Fundamental Transaction"), to the extent any portion to this Warrant remains unexercised, then immediately prior to the consummation of such Fundamental Transaction, this Warrant shall be automatically exercised in accordance with the "cashless exercise" provisions of Section 2(c) hereof and shall terminate and be of no further force and effect .

e) Adjustment Upon Issuance of Securities. Except as set forth in Section 3(e)(v), from the date hereof until the date that is twelve (12) months after the Closing Date (such period, the "Adjustment Period"), if the Company issues or sells, or, in accordance with this Section 3(e), is deemed to have issued or sold, any Common Stock, Convertible Securities or Options (including the issuance or sale of shares of Common Stock owned or held by or for the account of the Company, but excluding shares of Common Stock deemed to have been issued or sold by the Company in an Exempt Issuance) or to extend the term of such securities, for a consideration per share (the "New Issuance Price") less than a price equal to the Exercise Price in effect immediately prior to such issue or sale or deemed issuance or sale (such Exercise Price then in effect is referred to as the "Applicable Price") (the foregoing a "Dilutive Issuance"), then immediately after such Dilutive Issuance, the Exercise Price then in effect shall be reduced to an amount equal to the New Issuance Price. For all purposes of the foregoing, the following shall be applicable:

i. Issuance of Options. If, during the Adjustment Period, the Company in any manner grants or sells any Options (other than in an Exempt Issuance) and the lowest price per share for which one share of Common Stock is at any time issuable upon the exercise of any such Option or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the granting or sale of such Option for such price per share. For purposes of this Section 3(e)(i), the “lowest price per share for which one share of Common Stock is at any time issuable upon the exercise of any such Option or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof” shall be equal to (1) the lower of (x) the sum of the lowest amount of consideration (if any) received or receivable by the Company with respect to any share of Common Stock upon the granting or sale of such Option, upon exercise of such Option and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Option or otherwise pursuant to the terms thereof and (y) the lowest exercise price set forth in such Option for which one share of Common Stock is issuable upon the exercise of any such Options or upon conversion, exercise or exchange of any Convertible Securities issuable upon exercise of any such Option or otherwise pursuant to the terms thereof, minus (2) the sum of all amounts paid or payable to the holder of such Option (or any other Person), with respect to any one share of Common Stock, upon the granting or sale of such Option, upon exercise of such Option and upon conversion, exercise or exchange of any Convertible Security issuable upon exercise of such Option or otherwise pursuant to the terms thereof plus the value of any other consideration consisting of cash, debt forgiveness, assets or any other property received or receivable by, or benefit conferred on, the holder of such Option (or any other Person). Except as contemplated below, no further adjustment of the Exercise Price shall be made upon the actual issuance of such share of Common Stock or of such Convertible Securities upon the exercise of such Options or otherwise pursuant to the terms thereof or upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities.

ii. Issuance of Convertible Securities. If, during the Adjustment Period, the Company in any manner issues or sells any Convertible Securities (other than in an Exempt Issuance) and the lowest price per share for which one share of Common Stock is at any time issuable upon the conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof is less than the Applicable Price, then such share of Common Stock shall be deemed to be outstanding and to have been issued and sold by the Company at the time of the issuance or sale of such Convertible Securities for such price per share. For the purposes of this Section 3(e)(ii), the “lowest price per share for which one share of Common Stock is issuable upon the conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof” shall be equal to (1) the lower of (x) the sum of the lowest amount of consideration (if any) received or receivable by the Company with respect to one share of Common Stock upon the issuance or sale of the Convertible Security and upon conversion, exercise or exchange of such Convertible Security or otherwise pursuant to the terms thereof and (y) the lowest conversion price set forth in such Convertible Security for which one share of Common Stock is issuable upon conversion, exercise or exchange thereof or otherwise pursuant to the terms thereof minus (2) the sum of all amounts paid or payable to the holder of such Convertible Security (or any other Person) with respect to any one share of Common Stock upon the issuance or sale of such Convertible Security plus the value of any other consideration received or receivable consisting of cash, debt forgiveness, assets or other property by, or benefit conferred on, the holder of such Convertible Security (or any other Person). Except as contemplated below, no further adjustment of the Exercise Price shall be made upon the actual issuance of such shares of Common Stock upon conversion, exercise or exchange of such Convertible Securities or otherwise pursuant to the terms thereof, and if any such issuance or sale of such Convertible Securities is made upon exercise of any Options for which adjustment of the Exercise Price has been or is to be made pursuant to other provisions of this Section 3(e)(ii), except as contemplated below, no further adjustment of the Exercise Price shall be made by reason of such issuance or sale.

iii. Change in Option Price or Rate of Conversion. If, during the Adjustment Period, the purchase or exercise price provided for in any Options, the additional consideration, if any, payable upon the issue, conversion, exercise or exchange of any Convertible Securities, or the rate at which any Convertible Securities are convertible into or exercisable or exchangeable for shares of Common Stock increases or decreases at any time (other than proportional changes in conversion or exercise prices, as applicable, in connection with an event referred to in Section 3(a) above), the Exercise Price in effect at the time of such increase or decrease shall be adjusted to the Exercise Price which would have been in effect at such time had such Options or Convertible Securities provided for such increased or decreased purchase price, additional consideration or increased or decreased conversion rate (as the case may be) at the time initially granted, issued or sold. For purposes of this Section 3(e)(iii), if the terms of any Option or Convertible Security that was outstanding as of the date of issuance of this Warrant are increased or decreased in the manner described in the immediately preceding sentence, then such Option or Convertible Security and the shares of Common Stock deemed issuable upon exercise, conversion or exchange thereof shall be deemed to have been issued as of the date of such increase or decrease. No adjustment pursuant to this Section 3(e)(iii) shall be made if such adjustment would result in an increase of the Exercise Price then in effect.

iv. Calculation of Consideration Received. If any shares of Common Stock, Options or Convertible Securities are sold in an offering (other than an Exempt Issuance) as an integrated unit, the consideration received will be apportioned among the securities offered according to the value their fair market value as determined jointly by the Company and the Holder. If any shares of Common Stock, Options or Convertible Securities are issued or sold or deemed to have been issued or sold for cash, the consideration received therefor will be deemed to be the net amount of consideration received by the Company therefor. If any shares of Common Stock, Options or Convertible Securities are issued or sold for a consideration other than cash, the amount of such consideration received by the Company will be the fair value of such consideration, except where such consideration consists of publicly traded securities, in which case the amount of consideration received by the Company for such securities will be the arithmetic average of the VWAPs of such security for each of the five (5) Trading Days immediately preceding the date of receipt. If any shares of Common Stock, Options or Convertible Securities are issued to the owners of the non-surviving entity in connection with any merger in which the Company is the surviving entity, the amount of consideration therefor will be deemed to be the fair value of such portion of the net assets and business of the non-surviving entity as is attributable to such shares of Common Stock, Options or Convertible Securities (as the case may be). The fair value of any consideration other than cash or publicly traded securities will be determined jointly by the Company and the Holder. If such parties are unable to reach agreement within ten (10) days after the occurrence of an event requiring valuation (the "Valuation Event"), the fair value of such consideration will be determined within five (5) Business Days after the tenth (10th) day following the Valuation Event by an independent, reputable appraiser jointly selected by the Company and the Holder. The determination of such appraiser shall be final and binding upon all parties absent manifest error and the fees and expenses of such appraiser shall be borne by the Company.

v. Issuance pursuant to ATM Agreement. If, during the Adjustment Period, the Company issues shares of Common Stock with an aggregate value in excess of the ATM Cap, and the ATM VWAP (as defined below) calculated as of the expiration of the Adjustment Period, is less than the Applicable Price, then immediately following the expiration of the Adjustment Period, the Exercise Price then in effect shall be reduced to an amount equal to ATM VWAP. For purposes of this Section 3(e)(v), the "ATM VWAP" shall be equal to volume weighted average price of the Common Stock issued, in excess of the ATM Cap, pursuant to the ATM Agreement (or any successor similar agreement) during the Adjustment Period.

vi. Exercise Floor Price. No adjustment to the Exercise Price pursuant to this Section 3(e) of this Warrant shall cause the Exercise Price to be less than \$0.05 (as adjusted pursuant to Section 3(a) hereof for share splits, share dividends, recapitalizations and similar events, the "Exercise Floor Price"). For the avoidance of doubt, if a Dilutive Issuance would cause the Exercise Price to be lower than the Exercise Floor Price but for the immediately preceding sentence, then the Exercise Price shall be equal to the Exercise Floor Price.

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

g) Notice to Holder.

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

ii. Notice to Allow Exercise by Holder. If during the term in which the Warrant may be exercised (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 the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 10 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. Subject to compliance with any applicable securities laws and the conditions set forth in Section 4(d) hereof and to the provisions of Section 4.1 of the Purchase Agreement, 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 duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form (in the form attached hereto) to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) 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.

d) Transfer Restrictions. If, at the time of the surrender of this Warrant in connection with any transfer of this Warrant, the transfer of this Warrant shall not be either (i) registered pursuant to an effective registration statement under the Securities Act and under applicable state securities or blue sky laws or (ii) eligible for resale without volume or manner-of-sale restrictions or current public information requirements pursuant to Rule 144, the Company may require, as a condition of allowing such transfer, that the Holder or transferee of this Warrant, as the case may be, comply with the provisions of Section 5.7 of the Purchase Agreement.

e) Representation by the Holder. The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law, except pursuant to sales registered or exempted under the Securities Act.

Section 5. Miscellaneous.

a) 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(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares in a “cashless exercise” pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(iv) and Section 2(d)(v) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

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

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

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

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

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

e) Jurisdiction. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be determined in accordance with the provisions of the Purchase Agreement.

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

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant or the 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.

h) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Purchase Agreement.

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

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

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

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

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

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

(Signature Page Follows)

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

ACELRX PHARMACEUTICALS, INC.

By: /s/ Vincent J. Angotti
Name: Vincent J. Angotti
Title: Chief Executive Officer

NOTICE OF EXERCISE

TO: ACELRX PHARMACEUTICALS, 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; or

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

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

(4) After giving effect to this Notice of Exercise, the undersigned will not have exceeded the Beneficial Ownership Limitation.

The Warrant Shares shall be delivered to the following DWAC Account Number or by physical delivery of a certificate to:

[SIGNATURE OF HOLDER]

Name of Investing Entity: _____

Signature of Authorized Signatory of Investing Entity: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

ASSIGNMENT FORM

(To assign the foregoing warrant, execute this form and supply required information. Do not use this form to exercise the warrant.)

ACELRX PHARMACEUTICALS, INC.

FOR VALUE RECEIVED, [____] all of or [_____] shares of the foregoing Warrant and all rights evidenced thereby are hereby assigned to _____ whose address is _____.

Dated: _____, _____

Holder's Signature:

Holder's Address:

NOTE: The signature to this Assignment Form must correspond with the name as it appears on the face of the Warrant, without alteration or enlargement or any change whatsoever. Officers of corporations and those acting in a fiduciary or other representative capacity should file proper evidence of authority to assign the foregoing Warrant.

SECURITIES PURCHASE AGREEMENT

This **Securities Purchase Agreement** (this "Agreement") is dated as of August 3, 2022, between **AcelRx Pharmaceuticals, Inc.**, a Delaware corporation (the "Company"), the purchaser identified on the signature pages hereto (including its successors and assigns, the "Purchaser").

WHEREAS, subject to the terms and conditions set forth in this Agreement, the Company desires to issue and sell to the Purchaser, and the Purchaser 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 the Purchaser agree as follows:

ARTICLE I.

DEFINITIONS

1.1 Definitions. In addition to the terms defined elsewhere in this Agreement: (a) capitalized terms that are not otherwise defined herein have the meanings given to such terms in the Certificate of Designation (as defined herein), and (b) the following terms have the meanings set forth in this Section 1.1:

"Acquiring Person" shall have the meaning ascribed to such term in Section 4.5.

"Action" shall have the meaning ascribed to such term in Section 3.1(j).

"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.

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

"Business Day" means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to "stay at home", "shelter-in-place", "non-essential employee" or any other 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 day.

"Certificate of Designation" means the Certificate of Designation to be filed prior to the Closing by the Company with the Secretary of State of Delaware, in the form of Exhibit A attached hereto.

"Closing" means the closing of the purchase and sale of the Securities pursuant to Section 2.1.

"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 Purchaser's obligations to pay the Subscription Amount and (ii) the Company's obligations to deliver the Securities, in each case, have been satisfied or waived.

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

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

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

“Company Counsel” means Cooley LLP, with offices located at 3175 Hanover Street, Palo Alto, CA 94304.

“Conversion Price” shall have the meaning ascribed to such term in the Certificate of Designation.

“Conversion Shares” shall have the meaning ascribed to such term in the Certificate of Designation.

“Disclosure Time” means, (i) if this Agreement is signed on a 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, 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.

“Evaluation Date” shall have the meaning ascribed to such term in Section 3.1(s).

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

“FCPA” means the Foreign Corrupt Practices Act of 1977, as amended.

“FDA” shall have the meaning ascribed to such term in Section 3.1(ii).

“FDCA” shall have the meaning ascribed to such term in Section 3.1(ii).

“GAAP” shall have the meaning ascribed to such term in Section 3.1(h).

“Intellectual Property Rights” shall have the meaning ascribed to such term in Section 3.1(p).

“Legend Removal Date” shall have the meaning ascribed to such term in Section 4.1(c).

“Liens” means a lien, charge, pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction, other than restrictions imposed by securities laws.

“Material Adverse Effect” shall have the meaning assigned to such term in Section 3.1(b).

“Material Permits” shall have the meaning ascribed to such term in Section 3.1(n).

“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.

“Pharmaceutical Product” shall have the meaning ascribed to such term in Section 3.1(ii).

“Preferred Stock” means up to 3,000 shares of the Company’s Series A Preferred Stock issued hereunder having the rights, preferences and privileges set forth in the Certificate of Designation, in the form of Exhibit A hereto.

“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 in writing.

“Purchaser Party” shall have the meaning ascribed to such term in Section 4.7.

“Registration Rights Agreement” means the Registration Rights Agreement, dated on or about the date hereof, among the Company and the Purchaser, in the form of Exhibit B attached hereto.

“Registration Statement” or “Registration Statements” means the registration statement(s) meeting the requirements set forth in the Registration Rights Agreement and covering the resale of the Underlying Shares by the Purchaser as provided for in the Registration Rights Agreement.

“Repurchase Price” means \$330,000, to be paid via wire transfer in immediately available funds.

“Required Approvals” shall have the meaning ascribed to such term in Section 3.1(e).

“Required Minimum” means, as of any date, the maximum aggregate number of shares of Common Stock potentially issuable in the future pursuant to the Transaction Documents, including any Underlying Shares issuable upon exercise in full of all Warrants and conversion in full of all shares of Preferred Stock, ignoring any conversion or exercise limits set forth therein and the effect of potential future adjustments to the conversion or exercise price.

“Reverse Stock Split Amendment” means the amendment to the Company’s certificate of incorporation that effects the Reverse Stock Split.

“Reverse Stock Split” means a reverse stock split of the outstanding shares of Common Stock that is effected by the Company’s filing of an amendment to its certificate of incorporation with the Secretary of State of the State of Delaware and the acceptance thereof.

“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.

“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.

“SEC Reports” shall have the meaning ascribed to such term in Section 3.1(h).

“Securities” means the Preferred Stock, the Warrants and the Underlying Shares.

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

“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).

“Stated Value” means \$100.00 per share of Preferred Stock.

“Subscription Amount” means the aggregate amount to be paid for the Preferred Stock and Warrants purchased hereunder, in United States dollars and in immediately available funds.

“Subsidiary” means any subsidiary of the Company as set forth in the SEC Reports, and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

“Trading Day” means a day on which the principal Trading Market is open for trading.

“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 or the New York Stock Exchange (or any successors to any of the foregoing).

“Transaction Documents” means this Agreement, the Certificate of Designation, the Warrants, the Registration Rights Agreement, all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means Computershare Trust Company, N.A., the current transfer agent of the Company, with a mailing address of 250 Royall St., Canton, MA 02021, and any successor transfer agent of the Company.

“Underlying Shares” means the Conversion Shares and the Warrant Shares.

“Warrants” means the Common Stock purchase warrants delivered to the Purchaser at the Closing in accordance with Section 2.2(a) hereof, which Warrants shall have a term of exercise equal to five and a half (5.5) years from the initial issue date, in the form of Exhibit C attached hereto.

“Warrant Shares” means the shares of Common Stock issuable upon exercise of the Warrants.

ARTICLE II.

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 Purchaser agrees to purchase, 3,000 shares of Preferred Stock at the Stated Value, together with the Warrants, for an aggregate Subscription Amount equal to \$300,000. Upon satisfaction of the covenants and conditions set forth in Sections 2.2 and 2.3, the Closing shall occur at the offices of the Company or such other location as the parties shall mutually agree.

2.2 Deliveries.

(a) On or prior to the Closing Date, the Company shall deliver or cause to be delivered to the Purchaser the following:

(i) this Agreement duly executed by the Company;

(ii) a certificate evidencing the shares of Preferred Stock purchased pursuant hereto, registered in book entry in the name of the Purchaser, and evidence of the filing and acceptance of the Certificate of Designation from the Secretary of State of Delaware;

(iii) a Warrant registered in the name of the Purchaser to purchase up to 1,623,008 shares of Common Stock, with an exercise price equal to 110% of the Conversion Price, subject to adjustment as set forth therein;

(iv) the Company shall have provided the Purchaser with the Company’s wire instructions; and

(v) the Registration Rights Agreement duly executed by the Company.

(b) On or prior to the Closing Date, the Purchaser shall deliver or cause to be delivered to the Company, the following:

(i) this Agreement duly executed by the Purchaser;

(ii) the Subscription Amount by wire transfer to the account specified by the Company; and

(iii) the Registration Rights Agreement duly executed by the Purchaser.

(c) No later than three Business Days following the Closing Date, the Company shall deliver or cause to be delivered to the Purchaser an opinion of counsel in a form reasonably acceptable to the Purchaser.

2.3 Closing Conditions.

(a) The obligations of the Company hereunder in connection with the Closing are subject to the following conditions being met:

(i) 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 Purchaser contained herein (unless as of a specific date therein in which case they shall be accurate in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) as of such date);

(ii) all obligations, covenants and agreements of the Purchaser required to be performed at or prior to the Closing Date shall have been performed; and

(iii) the delivery by the Purchaser of the items set forth in Section 2.2(b) of this Agreement.

(b) The obligations of the Purchaser hereunder in connection with the Closing are subject to the following conditions being met:

(i) 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 in all material respects (or, to the extent representations or warranties are qualified by materiality or Material Adverse Effect, in all respects) as of such date);

(ii) all obligations, covenants and agreements of the Company required to be performed at or prior to the Closing Date shall have been performed;

(iii) the delivery by the Company of the items set forth in Section 2.2(a) of this Agreement;

(iv) there shall have been no Material Adverse Effect with respect to the Company since the date hereof; and

(v) 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 the Purchaser, makes it impracticable or inadvisable to purchase the Securities at the Closing.

ARTICLE III.

REPRESENTATIONS AND WARRANTIES

3.1 Representations and Warranties of the Company. Except as set forth in the SEC Reports, which SEC Reports shall be deemed a part hereof and shall qualify any representation or warranty otherwise made herein to the extent of the disclosure contained in the corresponding section of the SEC Reports, the Company hereby makes the following representations and warranties to the Purchaser:

(a) Subsidiaries. All of the direct and indirect subsidiaries of the Company are 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.

(b) Organization and Qualification. The Company and each of the 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 that changes in the market price or trading volume of the Common Stock shall not, in and of itself, constitute a Material Adverse Effect. 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.

(c) 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 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.

(d) 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.

(e) 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(s) with the Commission pursuant to the Registration Rights Agreement, (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 Underlying Shares for trading thereon in the time and manner required thereby and (iv) the filing of Form D with the Commission and such filings as are required to be made under applicable state securities laws (collectively, the “Required Approvals”).

(f) Issuance of the Securities. 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, free and clear of all Liens imposed by the Company other than restrictions on transfer provided for in the Transaction Documents. The Underlying Shares, when issued in accordance with the terms of the Transaction Documents, will be validly issued, fully paid and nonassessable, free and clear of all Liens imposed by the Company other than restrictions on transfer provided for in the Transaction Documents. The Company has reserved from its duly authorized capital stock a number of shares of Common Stock equal to the Required Minimum on the date hereof.

(g) Capitalization. The capitalization of the Company is as set forth in the SEC Reports as of the date reported therein. Except as reflected in the SEC Reports, 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 or settlement of employee stock options or other awards under the Company’s stock option 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 a result of the purchase and sale of the Securities as contemplated hereby and except as set forth in the SEC Reports, 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 Purchaser). 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. 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. Except as disclosed in the SEC Reports, 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 applicable 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. Except for the rights provided in the Transaction Documents, 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.

(h) 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, being collectively referred to herein as the “SEC Reports”). 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 except that unaudited financial statements may not contain all footnotes required by GAAP, 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.

(i) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest audited financial statements included within the SEC Reports, (i) there has been no event, occurrence or development that has had or that would reasonably be expected to result in a Material Adverse Effect, (ii) the Company has not incurred any material 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 materially 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 or other equity 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 or as set forth on Schedule 3.1(i), no event, liability, fact, circumstance, occurrence or development has occurred or exists with respect to the Company or its Subsidiaries or their respective businesses, 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.

(j) Litigation. Except as set forth in the SEC Reports, there is no material action, suit, inquiry, notice of violation, Proceeding or investigation pending or, to the knowledge of the Company, threatened in writing against 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, (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or the Securities or (ii) except as set forth in the SEC Reports would, if there were an unfavorable decision, reasonably be expected to result in a Material Adverse Effect. Except as set forth in the SEC Reports, 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. Except as set forth in the SEC Reports, 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. 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.

(k) 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 would 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 would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(l) 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 written 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 disclosed in the SEC Reports or as would not reasonably be expected to result in a Material Adverse Effect.

(m) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with all applicable 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.

(n) 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.

(o) Title to Assets. The Company and the Subsidiaries have good and marketable title in fee simple to all real property owned by them. The Company and the Subsidiaries have good and marketable title in all personal property owned by them 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 as 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, (ii) Liens for the payment of federal, state or other taxes, for which appropriate reserves have been made therefor in accordance with GAAP and, the payment of which is neither delinquent nor subject to penalties, and (iii) Liens that would not, individually or in the aggregate, have or be expected to have a Material Adverse Effect. Any real property and facilities held under lease by the Company and the Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and the Subsidiaries are in compliance in all material respects.

(p) 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 would have a Material Adverse Effect (collectively, the "Intellectual Property Rights"). None of, and neither the Company nor any Subsidiary has received a 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 from 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 would 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 would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(q) 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. 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.

(r) Transactions with Affiliates and Employees. Except as set forth in the SEC Reports, 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 or other equity awards under any stock option plan or other equity plan of the Company.

(s) 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 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. The Company and the Subsidiaries maintain a system of internal accounting controls designed 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.

(t) Certain Fees. 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 Purchaser 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 that may be due in connection with the transactions contemplated by the Transaction Documents.

(u) Private Placement. Assuming the accuracy of the Purchaser's representations and warranties set forth in Section 3.2, no registration under the Securities Act is required for the offer and sale of the Securities by the Company to the Purchaser as contemplated hereby. The issuance and sale of the Securities hereunder does not contravene the rules and regulations of the Trading Market.

(v) 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.

(w) Registration Rights. Other than the Purchaser or as disclosed in the SEC Reports, 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.

(x) 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 described 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.

(y) 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 Purchaser as a result of the Purchaser and the Company fulfilling their respective obligations or exercising their respective rights under the Transaction Documents, including without limitation as a result of the Company’s issuance of the Securities and the Purchaser’s ownership of the Securities.

(z) 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 the Purchaser or its agents or counsel with any information that it believes constitutes or might constitute material, non-public information. The Company understands and confirms that the Purchaser 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 Purchaser regarding the Company and its Subsidiaries, their respective businesses and the transactions contemplated hereby is true and correct in all material respects 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 3.2 hereof.

(aa) No Integrated Offering. Assuming the accuracy of the Purchaser’s representations and warranties set forth in Section 3.2, neither the Company, nor, to the Company’s knowledge, 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 (i) the Securities Act which would require the registration of any such securities under the Securities Act, or (ii) any applicable stockholder approval provisions of any Trading Market on which any of the securities of the Company are listed or designated.

(bb) Tax Status. Except for matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect, the Company and its Subsidiaries each (i) has made or filed all required 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 taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations, except those being contested in good faith, with respect to which adequate reserves have been set aside on the books of the Company, 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.

(cc) No General Solicitation. Neither the Company nor, to the Company's knowledge, any Person acting on behalf of the Company has offered or sold any of the Securities by any form of general solicitation or general advertising. The Company has offered the Securities for sale only to the Purchaser and certain other "accredited investors" within the meaning of Rule 501 under the Securities Act.

(dd) Foreign Corrupt Practices. 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.

(ee) Accountants. The Company's accounting firm is set forth in the SEC Reports. 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 fiscal year ending December 31, 2022.

(ff) 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.

(gg) Acknowledgment Regarding Purchaser's Purchase of Securities. The Company acknowledges and agrees that the Purchaser 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 the Purchaser is not 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 the Purchaser or any of its respective representatives or agents in connection with the Transaction Documents and the transactions contemplated thereby is merely incidental to the Purchaser's purchase of the Securities. The Company further represents to the 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.

(hh) 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.

(ii) 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. Except as set forth in the SEC Reports, there is no pending, completed or, to the Company’s knowledge, threatened in writing, 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. Except as disclosed in the SEC Reports, 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.

(jj) Stock Option Plans. Each stock option granted by the Company under the Company’s stock option plan or other equity plan was granted (i) in accordance with the terms of the Company’s stock option plan or other equity 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 or other equity 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.

(kk) Cybersecurity. (i)(x) 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 their respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of them), equipment or technology (collectively, “IT Systems and Data”) and (y) the Company and the Subsidiaries have not been notified of, and have no knowledge of any event or condition that would reasonably be expected to result in, any security breach or other compromise to their 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 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 their 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.

(ll) 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”).

(mm) 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.

(nn) 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") or 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.

(oo) 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 in writing.

(pp) No Disqualification Events. With respect to the Securities to be offered and sold hereunder in reliance on Rule 506 under the Securities Act, none of the Company, any of its predecessors, any affiliated issuer, any director, executive officer, other officer of the Company participating in the offering hereunder, any beneficial owner of 20% or more of the Company's outstanding voting equity securities, calculated on the basis of voting power, nor any promoter (as that term is defined in Rule 405 under the Securities Act) connected with the Company in any capacity at the time of sale (each, an "Issuer Covered Person" and, together, "Issuer Covered Persons") is subject to any of the "Bad Actor" disqualifications described in Rule 506(d)(1)(i) to (viii) under the Securities Act (a "Disqualification Event"), except for a Disqualification Event covered by Rule 506(d)(2) or (d)(3). The Company has exercised reasonable care to determine whether any Issuer Covered Person is subject to a Disqualification Event. The Company has complied, to the extent applicable, with its disclosure obligations under Rule 506(e), and has furnished to the Purchaser a copy of any disclosures provided thereunder.

(qq) Other Covered Persons. The Company is not aware of any person (other than any Issuer Covered Person) that has been or will be paid (directly or indirectly) remuneration for solicitation of purchasers in connection with the sale of any Securities.

(rr) Notice of Disqualification Events. The Company will notify the Purchaser in writing, prior to the Closing Date of (i) any Disqualification Event relating to any Issuer Covered Person and (ii) any event that would, with the passage of time, reasonably be expected to become a Disqualification Event relating to any Issuer Covered Person, in each case of which it is aware.

3.2 Representations and Warranties of the Purchaser. The 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):

(a) Organization; Authority. The Purchaser is either an individual or an entity duly incorporated or formed, validly existing and in good standing under the laws 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 the 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 the Purchaser. Each Transaction Document to which it is a party has been duly executed by the Purchaser, and when delivered by the Purchaser in accordance with the terms hereof, will constitute the valid and legally binding obligation of the 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.

(b) Understandings or Arrangements. The Purchaser is acquiring the Securities as principal for its own account and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities (this representation and warranty not limiting the Purchaser's right to sell the Securities in compliance with applicable federal and state securities laws). The Purchaser is acquiring the Securities hereunder in the ordinary course of its business. The Purchaser understands that the Securities are "restricted securities" and have not been registered under the Securities Act or any applicable state securities law and is acquiring the Securities as principal for its own account and not with a view to or for distributing or reselling such Securities or any part thereof in violation of the Securities Act or any applicable state securities law, has no present intention of distributing any of such Securities in violation of the Securities Act or any applicable state securities law and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities in violation of the Securities Act or any applicable state securities law (this representation and warranty not limiting the Purchaser's right to sell the Securities pursuant to the Registration Statement(s) or otherwise in compliance with applicable federal and state securities laws).

(c) Purchaser Status. At the time the 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 or converts any shares of Preferred Stock, 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) under the Securities Act.

(d) Experience of the Purchaser. The 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. The 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.

(e) General Solicitation. The Purchaser is not, to its knowledge, purchasing the Securities as a result of any advertisement, article, notice or other communication regarding the Securities published in any newspaper, magazine or similar media or broadcast over television or radio or presented at any seminar or, to the knowledge of the Purchaser, any other general solicitation or general advertisement.

(f) Access to Information. The 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.

(g) Certain Transactions and Confidentiality. Other than consummating the transactions contemplated hereunder, the Purchaser has not, nor has any Person acting on behalf of or pursuant to any understanding with the 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 the 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 the Purchaser's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of the 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 the Purchaser's representatives, including, without limitation, its officers, directors, partners, legal and other advisors, employees, agents and Affiliates, the 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.

(h) Purchaser's Trading Activity. On and after the date hereof, the Purchaser shall desist from purchasing or selling any "short" position in securities of the Company, or engaging in "hedging" or "derivative" transactions involving securities issued by the Company. Neither the Purchaser, nor any counter-parties in "derivative" or "hedging" transactions to which the Purchaser is a party, directly or indirectly, presently have a "short" position in the Common Stock. The Purchaser does not have any affiliation with or control over any arm's length counter-party in any "derivative" or "hedging" transaction involving Company's securities.

The Company acknowledges and agrees that the representations contained in this Section 3.2 shall not modify, amend or affect the 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.

ARTICLE IV.

OTHER AGREEMENTS OF THE PARTIES

4.1 Transfer Restrictions.

(a) The Securities may only be disposed of in compliance with state and federal securities laws. In connection with any transfer of Securities other than pursuant to an effective registration statement or Rule 144, to the Company or to an Affiliate of a Purchaser or in connection with a pledge as contemplated in Section 4.1(b), the Company may require the transferor thereof to provide to the Company an opinion of counsel selected by the transferor and reasonably acceptable to the Company, the form and substance of which opinion shall be reasonably satisfactory to the Company, to the effect that such transfer does not require registration of such transferred Securities under the Securities Act. As a condition of transfer, any such transferee shall agree in writing to be bound by the terms of this Agreement and the Registration Rights Agreement and shall have the rights and obligations of the Purchaser under this Agreement and the Registration Rights Agreement.

(b) The Purchaser agrees to the imprinting, so long as is required by this Section 4.1, of a legend on any of the Securities in the following form:

[NEITHER] THIS SECURITY [NOR THE SECURITIES FOR WHICH THIS SECURITY IS [EXERCISABLE] [CONVERTIBLE]] HAS [NOT] BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR UNDER ANY STATE SECURITIES OR BLUE SKY LAWS. THE SECURITIES ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE, AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD, PLEDGED, HYPOTHECATED OR OTHERWISE TRANSFERRED EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. INVESTORS SHOULD BE AWARE THAT THEY MAY BE REQUIRED TO BEAR THE FINANCIAL RISKS OF THIS INVESTMENT FOR AN INDEFINITE PERIOD OF TIME. THIS SECURITY IS SUBJECT TO THE TRANSFER RESTRICTION SET FORTH HEREIN AND IN THE SECURITIES PURCHASE AGREEMENT, DATED AUGUST 3, 2022, AS AMENDED FROM TIME TO TIME, COPIES OF WHICH ARE AVAILABLE WITH THE SECRETARY OF THE COMPANY. THIS SECURITY [AND THE SECURITIES ISSUABLE UPON [EXERCISE] [CONVERSION] OF THIS SECURITY] MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT WITH A REGISTERED BROKER-DEALER OR OTHER LOAN WITH A FINANCIAL INSTITUTION THAT IS AN "ACCREDITED INVESTOR" AS DEFINED IN RULE 501(A) UNDER THE SECURITIES ACT OR OTHER LOAN SECURED BY SUCH SECURITIES.

The Company acknowledges and agrees that the Purchaser may from time to time pledge pursuant to a bona fide margin agreement with a registered broker-dealer or grant a security interest in some or all of the Securities to a financial institution that is an “accredited investor” as defined in Rule 501(a) under the Securities Act and, if required under the terms of such arrangement, the Purchaser may transfer pledged or secured Securities to the pledgees or secured parties. Such a pledge or transfer would not be subject to approval of the Company and no legal opinion of legal counsel of the pledgee, secured party or pledgor shall be required in connection therewith. Further, no notice shall be required of such pledge. At the appropriate Purchaser’s expense, the Company will execute and deliver such reasonable documentation as a pledgee or secured party of Securities may reasonably request in connection with a pledge or transfer of the Securities, including, if the Securities are subject to registration pursuant to the Registration Rights Agreement, the preparation and filing of any required prospectus supplement under Rule 424(b)(3) under the Securities Act or other applicable provision of the Securities Act to appropriately amend the list of Selling Stockholders (as defined in the Registration Rights Agreement) thereunder.

(c) Certificates evidencing the Underlying Shares shall not contain any legend (including the legend set forth in Section 4.1(b) hereof): (i) while a registration statement (including the Registration Statement(s)) covering the resale of such security is effective under the Securities Act, (ii) following any sale of such Underlying Shares pursuant to Rule 144 (assuming cashless exercise of the Warrants), (iii) if such Underlying Shares are eligible for sale under Rule 144 (assuming cashless exercise of the Warrants) or (iv) if such legend is not required under applicable requirements of the Securities Act (including judicial interpretations and pronouncements issued by the staff of the Commission). The Company shall cause its counsel to issue a legal opinion to the Transfer Agent or the Purchaser promptly if required by the Transfer Agent to effect the removal of the legend hereunder, or if requested by the Purchaser, respectively. If all or any shares of Preferred Stock are converted or any portion of a Warrant is exercised at a time when there is an effective registration statement to cover the resale of the applicable Underlying Shares, or if such Underlying Shares may be sold under Rule 144 and the Company is then in compliance with the current public information required under Rule 144, or if the Underlying Shares may be sold under Rule 144 (assuming cashless exercise of the Warrants) without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such Underlying Shares and without volume or manner-of-sale restrictions or if such legend is not otherwise required under applicable requirements of the Securities Act (including judicial interpretations and pronouncements issued by the staff of the Commission) then such Underlying Shares shall be issued free of all legends. The Company agrees that following such time as such legend is no longer required under this Section 4.1(c), it will, no later than the earlier of (i) three (3) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined below) following the delivery by the Purchaser to the Company or the Transfer Agent of a certificate representing Underlying Shares, as applicable, issued with a restrictive legend (such date, the “Legend Removal Date”), deliver or cause to be delivered to the Purchaser a certificate representing such shares that is free from all restrictive and other legends. The Company may not make any notation on its records or give instructions to the Transfer Agent that enlarge the restrictions on transfer set forth in this Section 4. Certificates for Underlying Shares subject to legend removal hereunder shall be transmitted by the Transfer Agent to the Purchaser by crediting the account of the Purchaser’s prime broker with the Depository Trust Company System as directed by the Purchaser. 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 a certificate representing Underlying Shares, as applicable, issued with a restrictive legend.

(d) If the Company fails to (a) issue and deliver (or cause to be delivered) to a Purchaser by the Legend Removal Date a certificate representing the Securities so delivered to the Company by the Purchaser that is free from all restrictive and other legends and (b) if after the Legend Removal Date the Purchaser purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by the Purchaser of all or any portion of the number of shares of Common Stock, or a sale of a number of shares of Common Stock equal to all or any portion of the number of shares of Common Stock that the Purchaser anticipated receiving from the Company without any restrictive legend, then, an amount equal to the excess of the Purchaser’s total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased (including brokerage commissions and other out-of-pocket expenses, if any) (the “Buy-In Price”) over the product of (x) such number of Underlying Shares that the Company was required to deliver to the Purchaser by the Legend Removal Date multiplied by (y) the lowest closing sale price of the Common Stock on any Trading Day during the period commencing on the date of the delivery by the Purchaser to the Company of the applicable Underlying Shares (as the case may be) and ending on the date of such delivery and payment under this clause (ii).

(e) The Purchaser agrees with the Company that it will sell any Securities pursuant to either the registration requirements of the Securities Act, including any applicable prospectus delivery requirements, or an exemption therefrom, and that if Securities are sold pursuant to a Registration Statement, they will be sold in compliance with the plan of distribution set forth therein, and acknowledges that the removal of the restrictive legend from certificates representing Securities as set forth in this Section 4.1 is predicated upon the Company's reliance upon this understanding.

4.2 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 Underlying 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 the Purchaser and regardless of the dilutive effect that such issuance may have on the ownership of the other stockholders of the Company.

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 in a manner that would require the registration under the Securities Act of the sale of the Securities or 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, by the Disclosure Time, file a Current Report on Form 8-K, including the Transaction Documents as exhibits thereto. From and after the filing of such Form 8-K, the Company represents to the Purchaser that it shall have publicly disclosed all material, non-public information delivered to the Purchaser by the Company or any of its Subsidiaries, or any of their respective officers, directors, employees or agents in connection with the transactions contemplated by the Transaction Documents. In addition, effective upon the filing of such Form 8-K, 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, employees or Affiliates on the one hand, and the Purchaser or any of its Affiliates on the other hand, shall terminate. The Company and the Purchaser shall consult with each other in issuing any press releases with respect to the transactions contemplated hereby, and neither the Company nor the Purchaser shall issue any press release nor otherwise make any such public statement without the prior consent of the Company, with respect to any press release of the Purchaser, or without the prior consent of the 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 the Purchaser, or include the name of the Purchaser in any filing with the Commission or any regulatory agency or Trading Market, without the prior consent of the Purchaser (not to be unreasonably withheld), except (a) as 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 case the Company shall provide the Purchasers with prior notice of such disclosure permitted under this clause (b) and reasonably cooperate with such Purchaser regarding such disclosure.

4.5 Shareholder Rights Plan. No claim will be made or enforced by the Company or, with the consent of the Company, any other Person, that the 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 the 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 Purchaser.

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 the Purchaser or its agents or counsel with any information that constitutes, or the Company reasonably believes constitutes, material non-public information, unless prior thereto the Purchaser shall have consented to the receipt of such information and agreed with the Company to keep such information confidential. The Company understands and confirms that the 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 the Purchaser without the Purchaser's consent, the Company hereby covenants and agrees that the 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 file such notice with the Commission pursuant to a Current Report on Form 8-K. The Company understands and confirms that the Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company.

4.7 Indemnification of Purchaser. Subject to the provisions of this Section 4.7, the Company will indemnify and hold the 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 the 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 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 or (b) any action instituted against the Purchaser Parties in any capacity, or any of them or their respective Affiliates, by any stockholder of the Company who is not an Affiliate of the Purchaser Party (a "Stockholder Claimant"), with respect to any of the transactions contemplated by the Transaction Documents (unless such action is solely based upon (i) a material breach of the Purchaser Party's representations, warranties or covenants under the Transaction Documents, (ii) any agreements or understandings the Purchaser Party may have with any Stockholder Claimant, (iii) any violations by the Purchaser Party of state or federal securities laws or (iv) any conduct by the 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, the Purchaser Party shall promptly notify the Company in writing, and 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 the 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 Purchaser Party, a material conflict on any material issue between the position of the Company and the position of the 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 (y) for any settlement by a Purchaser Party effected without the Company's prior written consent, which shall not be unreasonably withheld or delayed; or (z) to the extent, but only to the extent that a loss, claim, damage or liability is attributable to any Purchaser Party's breach of any of the representations, warranties, covenants or agreements made by the Purchaser Party in this Agreement or in the other Transaction Documents. The indemnification required by this Section 4.7 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or are incurred; provided that, if the Purchaser Party is determined by final judgment of a court of competent jurisdiction to be not entitled to indemnification, the Purchaser Party shall promptly reimburse the Company for the funds that were advanced. 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.

4.8 Reservation and Listing of Securities.

(a) The Company shall maintain a reserve from its duly authorized shares of Common Stock for issuance pursuant to the Transaction Documents in such amount as may then be required to fulfill its obligations in full under the Transaction Documents, including without limitation the conversion of the Preferred Stock and the exercise of the Warrants.

(b) If, on any date, the number of authorized but unissued (and otherwise unreserved) shares of Common Stock is less than the Required Minimum on such date, then the Board of Directors shall use commercially reasonable efforts to amend the Company's certificate or articles of incorporation to increase the number of authorized but unissued shares of Common Stock to at least the Required Minimum at such time, as soon as possible and in any event not later than the 75th day after such date, provided that the Company will not be required at any time to authorize a number of shares of Common Stock greater than the maximum remaining number of shares of Common Stock that could possibly be issued after such time pursuant to the Transaction Documents.

(c) The Company shall, if applicable: (i) in the time and manner required by the principal Trading Market, prepare and file with such Trading Market an additional shares listing application covering a number of shares of Common Stock at least equal to the Required Minimum on the date of such application, (ii) take all steps necessary to cause such shares of Common Stock to be approved for listing or quotation on such Trading Market as soon as possible thereafter, (iii) provide to the Purchaser evidence of such listing or quotation and (iv) maintain the listing or quotation of such Common Stock on any date at least equal to the Required Minimum on such date on such Trading Market or another 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. In the event the Common Stock ceases to be listed or quoted on a Trading Market, the Company agrees to repurchase the Preferred Stock from the Purchaser at the Repurchase Price no later than 3 Business Days following the date on which the Common Stock ceases to be listed or quoted on a Trading Market.

(d) The Company shall hold a special meeting of shareholders (which may also be at the annual meeting of shareholders) at the earliest practical date after the date hereof, but in no event later than November 1, 2022 (assuming no review of the Proxy Statement by the Commission) for the purpose of consummating the Reverse Stock Split (the "Proposal"), with the recommendation of the Company's Board of Directors that such Proposal be approved, and the Company shall solicit proxies from its shareholders in connection therewith in the same manner as all other management proposals in such proxy statement and all management-appointed proxyholders shall vote their proxies in favor of such proposal. The Company shall use its reasonable best efforts to obtain approval of the Proposal. In the event the Proposal is not approved by the Company's shareholders on or prior to November 1, 2022 (the "Outside Date"), the Company agrees to deliver \$20,000 by wire transfer of immediately available funds to the account specified by the Purchaser no later than 3 Business Days following the Outside Date.

(e) So long as the Purchaser holds any securities of the Company contemplated by this Agreement, the Company shall make all filings with the Commission required under the Exchange Act in the time and manner required by the Commission.

4.9 Restrictions on Conversion and Voting of Preferred Stock.

(a) From the date hereof up to and including the effective date of the Reverse Stock Split Amendment, the Purchaser covenants that the Purchaser will not convert any shares of Preferred Stock and the Purchaser will not transfer, offer, sell, contract to sell, hypothecate, pledge or otherwise dispose of (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition of (whether by actual disposition or effective economic disposition due to cash settlement or otherwise)) any shares of Preferred Stock.

(b) The Purchaser covenants to vote, in person or by proxy, and shall cause its Affiliates to vote, all shares of Preferred Stock owned by the Purchaser or its Affiliates, as applicable, in favor of any resolution presented to the stockholders of the Company for the purpose of obtaining approval of the Reverse Stock Split Amendment, in the same proportion as shares of Common Stock (excluding any shares of Common Stock that are not voted) and any other issued and outstanding shares of preferred stock of the Company entitled to vote (excluding any such shares that are not voted).

4.10 Certain Transactions and Confidentiality. The Purchaser 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 Section 4.4. The Purchaser covenants that until such time as the transactions contemplated by this Agreement are publicly disclosed by the Company pursuant to Section 4.4, the Purchaser will maintain the confidentiality of the existence and terms of this transaction. Except as set forth in Section 3.2(h), the Company expressly acknowledges and agrees that (i) the Purchaser makes no 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 Section 4.4, (ii) the Purchaser shall not 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 Section 4.4 and (iii) the Purchaser shall have no duty of confidentiality or duty not to trade in the securities of the Company to the Company or its Subsidiaries after the filing of the Form 8-K as described in Section 4.4.

4.11 Financing Covenant. For a period beginning on the Closing Date and ending on the date that is twenty-four (24) months after the Closing Date, the Company shall not enter into any agreement for an equity line of credit if such agreement does not include the Purchaser as party thereto, with the exception of that certain Controlled Equity Offering Sales Agreement, dated June 21, 2016, by and between the Company and Cantor Fitzgerald & Co., as amended (the "ATM Agreement"), or any agreement that replaces such ATM Agreement and substantially similar to such ATM Agreement in all material respects.

4.12 Conversion Procedures. The form of Notice of Conversion included in the Certificate of Designation sets forth the totality of the procedures required of the Purchaser in order to convert the Preferred Stock. Without limiting the preceding sentence, no ink-original Notice of Exercise or Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise or Notice of Conversion form be required in order to convert the Preferred Stock. No additional legal opinion, other information or instructions shall be required of the Purchaser to convert its Preferred Stock. The Company shall honor conversions of the Preferred Stock and shall deliver Underlying Shares in accordance with the terms, conditions and time periods set forth in the Transaction Documents.

ARTICLE V.

MISCELLANEOUS

5.1 Termination. This Agreement may be terminated by the Company or the Purchaser 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-day processing of any instruction letter delivered by the Company and any conversion or exercise notice delivered by a Purchaser, if applicable), stamp taxes and other taxes and duties levied in connection with the delivery of any Securities to the Purchaser. As consideration for consummating the Transaction Documents, the Company shall reimburse the Purchaser in the amount of \$20,000 for expenses incurred in connection with entering into the Transaction Documents.

5.3 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, 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 facsimile at the facsimile number or email attachment at the e-mail 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 facsimile or email attachment at the facsimile number or e-mail address as set forth on the signature pages attached hereto on a 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.

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 the Purchaser and, in the case of a waiver, by the party against whom enforcement of any such waived provision is sought. Any amendment effected in accordance with this Section 5.5 shall be binding upon the Purchaser and any subsequent 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 the Purchaser (other than by merger). The Purchaser may assign any or all of its rights under this Agreement to any Person to whom the 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 “Purchaser.”

5.8 No Third-Party Beneficiaries. 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 4.7.

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 internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (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 4.7, 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. Subject to the applicable statute of limitations, 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 counterparts, each 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. In the event that any signature is delivered by facsimile transmission or 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 facsimile or “.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 the 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 the 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 a conversion of the Preferred Stock or exercise of a Warrant, the Purchaser shall be required to return any shares of Common Stock subject to any such rescinded conversion or exercise notice concurrently with the return to the Purchaser of the aggregate exercise price paid to the Company for such shares and the restoration of the Purchaser’s right to acquire such shares pursuant to the 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, the Purchaser 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 the Purchaser pursuant to any Transaction Document or the 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 Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

5.18 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.

5.19 **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.

(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.

ACELRX PHARMACEUTICALS, INC.

Address for Notice:

AcelRx Pharmaceuticals, Inc.
25821 Industrial Boulevard, Suite 400
Hayward, CA 94545

Email:

By: /s/ Vincent J. Angotti

Name: Vincent J. Angotti

Title: Chief Executive Officer

With a copy to (which shall not constitute notice):

Cooley LLP
3175 Hanover Street
Palo Alto, CA 94304
Attention: John T. McKenna
Email: jmckenna@cooley.com

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK
SIGNATURE PAGE FOR THE PURCHASER FOLLOWS]

[PURCHASER SIGNATURE PAGES TO SECURITIES PURCHASE AGREEMENT]

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

Name of Purchaser: **LINCOLN PARK CAPITAL FUND, LLC**
By: **LINCOLN PARK CAPITAL FUND, LLC**
By: **ROCKLEDGE CAPITAL CORPORATION**

Signature of Authorized Signatory of Purchaser: /s/ Josh Scheinfeld

Name of Authorized Signatory: Josh Scheinfeld

Title of Authorized Signatory: President

Email Address of Authorized Signatory:

Address for Notice to Purchaser: 440 North Wells Street, Suite 410, Chicago, Illinois 60654

Address for Delivery of Securities to Purchaser (if not same as address for notice): Same

Subscription Amount: \$300,000

Shares of Preferred Stock: 3,000

Warrant Shares: Beneficial Ownership Blocker 4.99% or 9.99%

EIN Number:

[SIGNATURE PAGES CONTINUE]

[PURCHASER SIGNATURE PAGES TO SECURITIES PURCHASE AGREEMENT]

REGISTRATION RIGHTS AGREEMENT

This **Registration Rights Agreement** (this “Agreement”) is made and entered into as of August 3, 2022, between **AcelRx Pharmaceuticals, Inc.**, a Delaware corporation (the “Company”), and purchaser signatory hereto (the “Purchaser”).

This Agreement is made pursuant to the Securities Purchase Agreement, dated as of the date hereof, between the Company and the Purchaser (the “Purchase Agreement”).

The Company and the Purchaser hereby agrees as follows:

1. Definitions. Capitalized terms used and not otherwise defined herein that are defined in the Purchase Agreement shall have the meanings given such terms in the Purchase Agreement or the Certificate of Designation. As used in this Agreement, the following terms shall have the following meanings:

“Advice” shall have the meaning set forth in Section 6(b).

“Effectiveness Date” means, (a) with respect to the Initial Registration Statement to be filed hereunder, (i) in the event all of the Preferred Stock has not been fully redeemed, the 60th calendar day following the effective date of the Reverse Stock Split Amendment (or, in the event of a “full review” by the Commission, the 90th calendar day following the effective date of the Reverse Stock Split Amendment) or (ii) in the event all of the Preferred Stock has been fully redeemed, the 150th calendar day following the Closing Date (or, in the event of a “full review” by the Commission, the 180th calendar day following the Closing Date), and (b) with respect to any additional Registration Statements which may be required pursuant to Section 2(c) or Section 3(c), the 60th calendar day following the date on which an additional Registration Statement is required to be filed hereunder (or, in the event of a “full review” by the Commission, the 90th calendar day following the date such additional Registration Statement is required to be filed hereunder); provided, however, that in the event the Company is notified by the Commission that one or more of the above Registration Statements will not be reviewed or is no longer subject to further review and comments, the Effectiveness Date as to such Registration Statement shall be the fifth (5th) Trading Day following the date on which the Company is so notified if such date precedes the dates otherwise required above, provided, further, if such Effectiveness Date falls on a day that is not a Trading Day, then the Effectiveness Date shall be the next succeeding Trading Day.

“Effectiveness Period” shall have the meaning set forth in Section 2(a).

“Filing Date” means (a) with respect to the Initial Registration Statement required hereunder, (i) in the event all of the Preferred Stock has not been fully redeemed, the 30th calendar day following the effective date of the Reverse Stock Split Amendment or (ii) in the event all of the Preferred Stock has been fully redeemed, with respect to the Initial Registration Statement required hereunder, the 120th calendar day following the Closing Date, and (b) with respect to any additional Registration Statements which may be required pursuant to Section 2(c) or Section 3(c), the earliest practical date on which the Company is permitted by SEC Guidance to file such additional Registration Statement related to the Registrable Securities.

“Holder” or “Holders” means the holder or holders, as the case may be, from time to time of Registrable Securities.

“Indemnified Party” shall have the meaning set forth in Section 5(c).

“Indemnifying Party” shall have the meaning set forth in Section 5(c).

“Initial Registration Statement” means the initial Registration Statement filed to register the shares of Common Stock underlying the Preferred Stock and/or the Warrants as provided in and pursuant to this Agreement.

“Losses” shall have the meaning set forth in Section 5(a).

“Plan of Distribution” shall have the meaning set forth in Section 2(a).

“Prospectus” means the prospectus included in a Registration Statement (including, without limitation, a prospectus that includes any information previously omitted from a prospectus filed as part of an effective registration statement in reliance upon Rule 430A promulgated by the Commission pursuant to the Securities Act), as amended or supplemented by any prospectus supplement, with respect to the terms of the offering of any portion of the Registrable Securities covered by a Registration Statement, and all other amendments and supplements to the Prospectus, including post-effective amendments, and all material incorporated by reference or deemed to be incorporated by reference in such Prospectus.

“Registrable Securities” means, as of any date of determination, (a) all shares of Common Stock then issued and issuable upon conversion in full of the Preferred Stock (assuming on such date the shares of Preferred Stock are converted in full without regard to any conversion limitations therein), (b) all Warrant Shares then issued and issuable upon exercise of the Warrants (assuming on such date the Warrants are exercised in full without regard to any exercise limitations therein), (c) any additional shares of Common Stock issued and issuable in connection with any anti-dilution provisions in the Preferred Stock or the Warrants (in each case, without giving effect to any limitations on conversion set forth in the Certificate of Designation or limitations on exercise set forth in the Warrants) and (d) any securities issued or then issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect to the foregoing; provided, however, that any such Registrable Securities shall cease to be Registrable Securities (and the Company shall not be required to maintain the effectiveness of any, or file another, Registration Statement hereunder with respect thereto) for so long as (a) a Registration Statement with respect to the sale of such Registrable Securities is declared effective by the Commission under the Securities Act and such Registrable Securities have been disposed of by the Holder in accordance with such effective Registration Statement, (b) such Registrable Securities have been previously sold in accordance with Rule 144, or (c) such securities become eligible for resale without volume or manner-of-sale restrictions and without current public information pursuant to Rule 144 as set forth in a written opinion letter to such effect, addressed, delivered and acceptable to the Transfer Agent and the affected Holders (assuming that such securities and any securities issuable upon exercise, conversion or exchange of which, or as a dividend upon which, such securities were issued or are issuable, were at no time held by any Affiliate of the Company), as reasonably determined by the Company, upon the advice of counsel to the Company.

“Registration Statement” means any registration statement required to be filed hereunder pursuant to Section 2(a) and any additional registration statements contemplated by Section 2(c) or 3(c), including (in each case) the Prospectus, amendments and supplements to any such registration statement or Prospectus, including pre- and post-effective amendments, all exhibits thereto, and all material incorporated by reference or deemed to be incorporated by reference in any such registration statement.

“Rule 415” means Rule 415 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.

“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.

“Selling Stockholder Questionnaire” shall have the meaning set forth in Section 3(a).

“SEC Guidance” means (i) any publicly-available written or oral guidance of the Commission staff, or any comments, requirements or requests of the Commission staff and (ii) the Securities Act.

2. Shelf Registration.

(a) On or prior to each Filing Date, the Company shall prepare and file with the Commission the Initial Registration Statement covering the resale of all of the Registrable Securities underlying the Preferred Stock and/or Warrants that are not then registered on an effective Registration Statement for an offering to be made on a continuous basis pursuant to Rule 415. Each Registration Statement filed hereunder shall be on Form S-3 (except if the Company is not then eligible to register for resale the Registrable Securities on Form S-3, in which case such registration shall be on another appropriate form in accordance herewith, subject to the provisions of Section 2(d)) and shall contain (unless otherwise directed by at least 85% in interest of the Holders or otherwise modified by the Company to comply with applicable law, rule or regulation or to make any disclosure contained therein not misleading) substantially the “Plan of Distribution” attached hereto as **Annex A** and substantially the “Selling Stockholder” section attached hereto as **Annex B**; provided, however, that no Holder shall be required to be named as an “underwriter” without such Holder’s express prior written consent. Subject to the terms of this Agreement, the Company shall use its commercially reasonable efforts to cause a Registration Statement filed under this Agreement (including, without limitation, under Section 3(c)) to be declared effective under the Securities Act as promptly as possible after the filing thereof, but in any event no later than the applicable Effectiveness Date, and shall use its commercially reasonable efforts to keep such Registration Statement continuously effective under the Securities Act until the date that all Registrable Securities covered by such Registration Statement (i) have been sold, thereunder or pursuant to Rule 144, or (ii) may be sold without volume or manner-of-sale restrictions pursuant to Rule 144 and without the requirement for the Company to be in compliance with the current public information requirement under Rule 144, as determined by the counsel to the Company pursuant to a written opinion letter to such effect, addressed and acceptable to the Transfer Agent and the affected Holders (the “Effectiveness Period”). The Company shall telephonically request from the Commission for the effectiveness of a Registration Statement to be as of 5:00 p.m. (New York City time) on a Trading Day, provided that the actual effectiveness shall be subject to the Commission’s approval of such effectiveness. The Company shall promptly notify the Holders via e-mail of the effectiveness of a Registration Statement on the same Trading Day that the Company telephonically confirms effectiveness with the Commission, which shall be the date requested for effectiveness of such Registration Statement. The Company shall, by 9:30 a.m. (New York City time) on the Trading Day after the effective date of such Registration Statement, file a final Prospectus with the Commission as required by Rule 424.

(b) Notwithstanding the registration obligations set forth in Section 2(a), if the Commission informs the Company that all of the Registrable Securities on the Initial Registration Statement cannot, as a result of the application of Rule 415, be registered for resale as a secondary offering on such registration statement, then the Company agrees to promptly inform each of the Holders thereof and use its commercially reasonable efforts to file an amendment to the Initial Registration Statement as required by the Commission, covering the maximum number of Registrable Securities permitted to be registered by the Commission, on Form S-3 or such other form available to register for resale the Registrable Securities as a secondary offering, subject to the provisions of Section 2(d); provided, however, that prior to filing such amendment, the Company shall be obligated to use diligent efforts to advocate with the Commission for the registration of all of the Registrable Securities in accordance with the SEC Guidance, including without limitation, Securities Act Rules Compliance and Disclosure Interpretation Question 612.09.

(c) Notwithstanding any other provision of this Agreement, if the Commission or any SEC Guidance sets forth a limitation on the number of Registrable Securities permitted to be registered on a particular Registration Statement as a secondary offering (and notwithstanding that the Company used diligent efforts to advocate with the Commission for the registration of all of the Registrable Securities), unless otherwise directed in writing by a Holder as to its Registrable Securities, the number of Registrable Securities to be registered on such Registration Statement will be reduced as follows:

(i) First, the Company shall reduce or eliminate any securities to be included other than Registrable Securities;

(ii) Second, the Company shall reduce Registrable Securities represented by Warrant Shares (applied, in the case that some Warrant Shares may be registered, to the Holders on a pro rata basis based on the total number of unregistered Warrant Shares held by such Holders); and

(iii) Third, the Company shall reduce Registrable Securities represented by Conversion Shares (applied, in the case that some Conversion Shares may be registered, to the Holders on a pro rata basis based on the total number of unregistered Conversion Shares held by such Holders).

In the event of a cutback hereunder, the Company shall give the Holder at least five (5) Trading Days’ prior written notice along with the calculations as to such Holder’s allotment. In the event the Company amends the Initial Registration Statement in accordance with the foregoing, then the Company shall use its commercially reasonable efforts to file with the Commission, as promptly thereafter as allowed by Commission or SEC Guidance provided to the Company or to registrants of securities in general, one or more registration statements on Form S-3 or such other form available to register for resale those Registrable Securities that were not registered for resale on the Initial Registration Statement, as amended.

(d) If Form S-3 is not available for the registration of the resale of Registrable Securities hereunder, the Company shall (i) register the resale of the Registrable Securities on another appropriate form and (ii) undertake to register the Registrable Securities on Form S-3 as soon as reasonably practicable after such form is available, provided that the Company shall maintain the effectiveness of the Registration Statement then in effect until such time as a Registration Statement on Form S-3 covering the Registrable Securities has been declared effective by the Commission.

3. Registration Procedures.

In connection with the Company's registration obligations hereunder, the Company shall:

(a) Not less than five (5) Trading Days prior to the filing of each Registration Statement and not less than one (1) Trading Day prior to the filing of any related Prospectus or any amendment or supplement thereto (including any document that would be incorporated or deemed to be incorporated therein by reference), the Company shall (i) furnish to each Holder copies of all such documents proposed to be filed, which documents (other than those incorporated or deemed to be incorporated by reference) will be subject to the review of such Holders, and (ii) cause its officers and directors, counsel and independent registered public accountants to respond to such inquiries as shall be necessary, in the reasonable opinion of respective counsel to each Holder, to conduct a reasonable investigation within the meaning of the Securities Act. The Company shall not file a Registration Statement or any such Prospectus or any amendments or supplements thereto to which the Holders of a majority of the Registrable Securities shall reasonably object in good faith, provided that, the Company is notified of such objection in writing setting forth in detail the basis of such objection no later than five (5) Trading Days after the Holders have been so furnished copies of a Registration Statement or one (1) Trading Day after the Holders have been so furnished copies of any related Prospectus or amendments or supplements thereto. Each Holder agrees to furnish to the Company a completed questionnaire in the form attached to this Agreement as **Annex C** (a "Selling Stockholder Questionnaire") on a date that is not less than two (2) Trading Days prior to the Filing Date or by the end of the fourth (4th) Trading Day following the date on which such Holder receives draft materials in accordance with this Section. Each Holder shall provide any additional information as may be reasonably requested by the Company and is necessary for purposes of complying with requirements under applicable securities laws and regulations or rules of any applicable stock exchange where the Common Stock is then listed.

(b) (i) Prepare and file with the Commission such amendments, including post-effective amendments, to a Registration Statement and the Prospectus used in connection therewith as may be necessary to keep a Registration Statement continuously effective as to the applicable Registrable Securities for the Effectiveness Period and prepare and file with the Commission the Initial Registration Statement or such additional Registration Statements in order to register for resale under the Securities Act all of the Registrable Securities to the extent provided in Section 2, (ii) cause the related Prospectus to be amended or supplemented by any required Prospectus supplement (subject to the terms of this Agreement), and, as so supplemented or amended, to be filed pursuant to Rule 424, (iii) respond as promptly as reasonably possible to any comments received from the Commission with respect to a Registration Statement or any amendment thereto and provide as promptly as reasonably possible to the Holders true and complete copies of all correspondence from and to the Commission relating to a Registration Statement (provided that, the Company shall excise any information contained therein which would constitute material non-public information regarding the Company or any of its Subsidiaries), and (iv) comply in all material respects with the applicable provisions of the Securities Act and the Exchange Act with respect to the disposition of all Registrable Securities covered by a Registration Statement during the applicable period in accordance (subject to the terms of this Agreement) with the intended methods of disposition by the Holders thereof set forth in such Registration Statement as so amended or in such Prospectus as so supplemented.

(c) If during the Effectiveness Period, the number of Registrable Securities at any time exceeds 100% of the number of shares of Common Stock then registered in a Registration Statement, then the Company shall file as soon as reasonably practicable, but in any case prior to the applicable Filing Date, an additional Registration Statement covering the resale by the Holders of not less than the number of such Registrable Securities.

(d) Notify the Holders of Registrable Securities to be sold (which notice shall, pursuant to clauses (iii) through (vi) hereof, be accompanied by an instruction to suspend the use of the Prospectus until the requisite changes have been made) as promptly as reasonably possible (and, in the case of (i)(A) below, not less than one (1) Trading Day prior to such filing) and (if requested by any such Person) confirm such notice in writing no later than one (1) Trading Day following the day (i)(A) when a Prospectus or any Prospectus supplement or post-effective amendment to a Registration Statement is proposed to be filed, (B) when the Commission notifies the Company whether there will be a “review” of such Registration Statement and whenever the Commission comments in writing on such Registration Statement, and (C) with respect to a Registration Statement or any post-effective amendment, when the same has become effective, (ii) of any request by the Commission or any other federal or state governmental authority for amendments or supplements to a Registration Statement or Prospectus or for additional information, (iii) of the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of a Registration Statement covering any or all of the Registrable Securities or the initiation of any Proceedings for that purpose, (iv) of the receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Registrable Securities for sale in any jurisdiction, or the initiation or threatening of any Proceeding for such purpose, (v) of the occurrence of any event or passage of time that makes the financial statements included in a Registration Statement ineligible for inclusion therein or any statement made in a Registration Statement or Prospectus or any document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires any revisions to a Registration Statement, Prospectus or other documents so that, in the case of a Registration Statement or the Prospectus, as the case may be, it 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, in light of the circumstances under which they were made, not misleading, and (vi) of the occurrence or existence of any pending corporate development with respect to the Company that the Company believes may be material and that, in the determination of the Company, makes it not in the best interest of the Company to allow continued availability of a Registration Statement or Prospectus; provided, however, that in no event shall any such notice contain any information which would constitute material, non-public information regarding the Company or any of its Subsidiaries.

(e) Use its commercially reasonable efforts to avoid the issuance of, or, if issued, obtain the withdrawal of (i) any order stopping or suspending the effectiveness of a Registration Statement, or (ii) any suspension of the qualification (or exemption from qualification) of any of the Registrable Securities for sale in any jurisdiction, at the earliest practicable moment.

(f) Furnish to each Holder, without charge, at least one conformed copy of each such Registration Statement and each amendment thereto, including financial statements and schedules, all documents incorporated or deemed to be incorporated therein by reference to the extent requested by such Person, and all exhibits to the extent requested by such Person (including those previously furnished or incorporated by reference) promptly after the filing of such documents with the Commission, provided that any such item which is available on the EDGAR system (or successor thereto) need not be furnished in physical form.

(g) Subject to the terms of this Agreement, the Company hereby consents to the use of such final Prospectus and each amendment or supplement thereto that are part of an effective Registration Statement by each of the selling Holders in connection with the offering and sale of the Registrable Securities covered by such Prospectus and any amendment or supplement thereto, except after the giving of any notice pursuant to Section 3(d).

(h) Prior to any resale of Registrable Securities by a Holder, use its commercially reasonable efforts to register or qualify or cooperate with the selling Holders in connection with the registration or qualification (or exemption from the Registration or qualification) of such Registrable Securities for the resale by the Holder under the securities or Blue Sky laws of such jurisdictions within the United States as any Holder reasonably requests in writing, to keep each registration or qualification (or exemption therefrom) effective during the Effectiveness Period and to do any and all other acts or things reasonably necessary to enable the disposition in such jurisdictions of the Registrable Securities covered by each Registration Statement, provided that the Company shall not be required to qualify generally to do business in any jurisdiction where it is not then so qualified, subject the Company to any material tax in any such jurisdiction where it is not then so subject or file a general consent to service of process in any such jurisdiction.

(i) If requested by a Holder, cooperate with such Holder to facilitate the timely preparation and delivery of certificates representing Registrable Securities to be delivered to a transferee pursuant to a Registration Statement, which certificates shall be free, to the extent permitted by the Purchase Agreement, of all restrictive legends, and to enable such Registrable Securities to be in such denominations and registered in such names as any such Holder may request.

(j) Upon the occurrence of any event contemplated by Section 3(d), as promptly as reasonably possible under the circumstances taking into account the Company's good faith assessment of any adverse consequences to the Company and its stockholders of the premature disclosure of such event, prepare a supplement or amendment, including a post-effective amendment, to a Registration Statement or a supplement to the related Prospectus or any document incorporated or deemed to be incorporated therein by reference, and file any other required document so that, as thereafter delivered, neither a Registration Statement nor such Prospectus will contain an untrue statement of a material fact or omit to state a 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. If the Company notifies the Holders in accordance with clauses (iii) through (vi) of Section 3(d) above to suspend the use of any Prospectus until the requisite changes to such Prospectus have been made, then the Holders shall suspend use of such Prospectus. The Company will use its commercially reasonable efforts to ensure that the use of the Prospectus may be resumed as promptly as is practicable. The Company shall be entitled to exercise its right under this Section 3(j) to suspend the availability of a Registration Statement and Prospectus for a period not to exceed sixty (60) calendar days (which need not be consecutive days) in any 12-month period.

(k) Otherwise use commercially reasonable efforts to comply with all applicable rules and regulations of the Commission under the Securities Act and the Exchange Act, including, without limitation, Rule 172 under the Securities Act, file any final Prospectus, including any supplement or amendment thereof, with the Commission pursuant to Rule 424 under the Securities Act, promptly inform the Holders in writing if, at any time during the Effectiveness Period, the Company does not satisfy the conditions specified in Rule 172 and, as a result thereof, the Holders are required to deliver a Prospectus in connection with any disposition of Registrable Securities and take such other actions as may be reasonably necessary to facilitate the registration of the Registrable Securities hereunder.

(l) The Company may require each selling Holder to furnish to the Company a certified statement as to the number of shares of Common Stock beneficially owned by such Holder and, if required by the Commission, the natural persons thereof that have voting and dispositive control over the shares. During any periods that the Company is unable to meet its obligations hereunder with respect to the registration of the Registrable Securities solely because any Holder fails to furnish such information within three (3) Trading Days of the Company's request, such Holder's rights to any damages under this agreement shall be suspended until such information is delivered to the Company; provided, however, if such delay prevents the filing of a Registration Statement or an amendment or supplement thereto, then such Holder's rights to any under this agreement shall be suspended until such Holder provides the information or withdraws its Registrable Securities from inclusion in the Registration Statement.

4. Registration Expenses. All fees and expenses incident to the performance of or compliance with, this Agreement by the Company shall be borne by the Company whether or not any Registrable Securities are sold pursuant to a Registration Statement. The fees and expenses referred to in the foregoing sentence shall include, without limitation, (i) all registration and filing fees (including, without limitation, fees and expenses of the Company's counsel and independent registered public accountants) (A) with respect to filings made with the Commission, (B) with respect to filings required to be made with any Trading Market on which the Common Stock is then listed for trading, and (C) in compliance with applicable state securities or Blue Sky laws reasonably agreed to by the Company in writing (including, without limitation, fees and disbursements of counsel for the Company in connection with Blue Sky qualifications or exemptions of the Registrable Securities), (ii) printing expenses (including, without limitation, expenses of printing certificates for Registrable Securities), (iii) messenger, telephone and delivery expenses, (iv) fees and disbursements of counsel for the Company, (v) Securities Act liability insurance, if the Company so desires such insurance, and (vi) fees and expenses of all other Persons retained by the Company in connection with the consummation of the transactions contemplated by this Agreement. In addition, the Company shall be responsible for all of its internal expenses incurred in connection with the consummation of the transactions contemplated by this Agreement (including, without limitation, all salaries and expenses of its officers and employees performing legal or accounting duties), the expense of any annual audit and the fees and expenses incurred in connection with the listing of the Registrable Securities on any securities exchange as required hereunder. In no event shall the Company be responsible for any broker or similar commissions of any Holder or, except to the extent provided for in the Transaction Documents, any legal fees or other costs of the Holders.

5. Indemnification.

(a) Indemnification by the Company. The Company shall, notwithstanding any termination of this Agreement, indemnify and hold harmless each Holder, the officers, directors, members, partners, agents, brokers (including brokers who offer and sell Registrable Securities as principal as a result of a pledge or any failure to perform under a margin call of Common Stock), investment advisors and 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 each of them, each Person who controls any such Holder (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act) and the officers, directors, members, stockholders, partners, agents and 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 each such controlling Person, to the fullest extent permitted by applicable law, from and against any and all losses, claims, damages, liabilities, costs (including, without limitation, reasonable attorneys' fees) and expenses (collectively, "Losses"), as incurred, arising out of or relating to (1) any untrue or alleged untrue statement of a material fact contained in a Registration Statement, any Prospectus or any form of prospectus or in any amendment or supplement thereto or in any preliminary prospectus, or arising out of or relating to any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or supplement thereto, in light of the circumstances under which they were made) not misleading or (2) any violation or alleged violation by the Company of the Securities Act, the Exchange Act or any state securities law, or any rule or regulation thereunder, in connection with the performance of its obligations under this Agreement, except to the extent, but only to the extent, that (i) such untrue statements or omissions are based solely upon information regarding such Holder furnished in writing to the Company by such Holder expressly for use therein, or to the extent that such information relates to such Holder or such Holder's proposed method of distribution of Registrable Securities and was reviewed and expressly approved in writing by such Holder expressly for use in a Registration Statement, such Prospectus or in any amendment or supplement thereto (it being understood that the Holder has approved Annex A and Annex B hereto for this purpose) or (ii) in the case of an occurrence of an event of the type specified in Section 3(d)(iii)-(vi), the use by such Holder of an outdated, defective or otherwise unavailable Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated, defective or otherwise unavailable for use by such Holder and prior to the receipt by such Holder of the Advice contemplated in Section 6(b). The Company shall notify the Holders promptly of the institution, threat or assertion of any Proceeding arising from or in connection with the transactions contemplated by this Agreement of which the Company is aware. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such indemnified person and shall survive the transfer of any Registrable Securities by any of the Holders in accordance with Section 6(f).

(b) Indemnification by Holders. Each Holder shall, severally and not jointly, indemnify and hold harmless the Company, its directors, officers, agents and employees, each Person who controls the Company (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, agents or employees of such controlling Persons, to the fullest extent permitted by applicable law, from and against all Losses, as incurred, to the extent arising out of or based solely upon: any untrue or alleged untrue statement of a material fact contained in any Registration Statement, any Prospectus, or in any amendment or supplement thereto or in any preliminary prospectus, or arising out of or relating to any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or supplement thereto, in light of the circumstances under which they were made) not misleading (i) to the extent, but only to the extent, that such untrue statement or omission is contained in any information so furnished in writing by such Holder to the Company expressly for inclusion in such Registration Statement or such Prospectus or (ii) to the extent, but only to the extent, that such information relates to such Holder's information provided in the Selling Stockholder Questionnaire or the proposed method of distribution of Registrable Securities and was reviewed and expressly approved in writing by such Holder expressly for use in a Registration Statement (it being understood that the Holder has approved Annex A and Annex B hereto for this purpose), such Prospectus or in any amendment or supplement thereto. In no event shall the liability of a selling Holder be greater in amount than the dollar amount of the proceeds (net of all expenses paid by such Holder in connection with any claim relating to this Section 5 and the amount of any damages such Holder has otherwise been required to pay by reason of such untrue statement or omission or alleged omission) received by such Holder upon the sale of the Registrable Securities included in the Registration Statement giving rise to such indemnification obligation.

(c) Conduct of Indemnification Proceedings. If any Proceeding shall be brought or asserted against any Person entitled to indemnity hereunder (an “Indemnified Party”), such Indemnified Party shall promptly notify the Person from whom indemnity is sought (the “Indemnifying Party”) in writing, and the Indemnifying Party shall have the right to assume the defense thereof, including the employment of counsel reasonably satisfactory to the Indemnified Party and the payment of all fees and expenses incurred in connection with defense thereof, provided that the failure of any Indemnified Party to give such notice shall not relieve the Indemnifying Party of its obligations or liabilities pursuant to this Agreement, except (and only) to the extent that it shall be finally determined by a court of competent jurisdiction (which determination is not subject to appeal or further review) that such failure shall have materially and adversely prejudiced the Indemnifying Party.

An Indemnified Party shall have the right to employ separate counsel in any such Proceeding and to participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party or Parties unless: (1) the Indemnifying Party has agreed in writing to pay such fees and expenses, (2) the Indemnifying Party shall have failed promptly to assume the defense of such Proceeding and to employ counsel reasonably satisfactory to such Indemnified Party in any such Proceeding, or (3) the named parties to any such Proceeding (including any impleaded parties) include both such Indemnified Party and the Indemnifying Party, and counsel to the Indemnified Party shall reasonably believe that a material conflict of interest is likely to exist if the same counsel were to represent such Indemnified Party and the Indemnifying Party (in which case, if such Indemnified Party notifies the Indemnifying Party in writing that it elects to employ separate counsel at the expense of the Indemnifying Party, the Indemnifying Party shall not have the right to assume the defense thereof and the reasonable fees and expenses of no more than one separate counsel shall be at the expense of the Indemnifying Party). The Indemnifying Party shall not be liable for any settlement of any such Proceeding effected without its written consent, which consent shall not be unreasonably withheld or delayed. No Indemnifying Party shall, without the prior written consent of the Indemnified Party, effect any settlement of any pending Proceeding in respect of which any Indemnified Party is a party, unless such settlement includes an unconditional release of such Indemnified Party from all liability on claims that are the subject matter of such Proceeding.

Subject to the terms of this Agreement, all reasonable fees and expenses of the Indemnified Party (including reasonable fees and expenses to the extent incurred in connection with investigating or preparing to defend such Proceeding in a manner not inconsistent with this Section) shall be paid to the Indemnified Party, as incurred, within ten Trading Days of written notice thereof to the Indemnifying Party, provided that the Indemnified Party shall promptly reimburse the Indemnifying Party for that portion of such fees and expenses applicable to such actions for which such Indemnified Party is finally determined by a court of competent jurisdiction (which determination is not subject to appeal or further review) not to be entitled to indemnification hereunder.

(d) Contribution. If the indemnification under Section 5(a) or 5(b) is unavailable to an Indemnified Party or insufficient to hold an Indemnified Party harmless for any Losses, then each Indemnifying Party shall contribute to the amount paid or payable by such Indemnified Party, in such proportion as is appropriate to reflect the relative fault of the Indemnifying Party and Indemnified Party in connection with the actions, statements or omissions that resulted in such Losses as well as any other relevant equitable considerations. The relative fault of such Indemnifying Party and Indemnified Party shall be determined by reference to, among other things, whether any action in question, including any untrue or alleged untrue statement of a material fact or omission or alleged omission of a material fact, has been taken or made by, or relates to information supplied by, such Indemnifying Party or Indemnified Party, and the parties’ relative intent, knowledge, access to information and opportunity to correct or prevent such action, statement or omission. The amount paid or payable by a party as a result of any Losses shall be deemed to include, subject to the limitations set forth in this Agreement, any reasonable attorneys’ or other fees or expenses incurred by such party in connection with any Proceeding to the extent such party would have been indemnified for such fees or expenses if the indemnification provided for in this Section was available to such party in accordance with its terms.

The parties hereto agree that it would not be just and equitable if contribution pursuant to this Section 5(d) were determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to in the immediately preceding paragraph. In no event shall the contribution obligation of a Holder of Registrable Securities be greater in amount than the dollar amount of the proceeds (net of all expenses paid by such Holder in connection with any claim relating to this Section 5 and the amount of any damages such Holder has otherwise been required to pay by reason of such untrue statement or omission or alleged omission) received by it upon the sale of the Registrable Securities giving rise to such contribution obligation.

The indemnity and contribution agreements contained in this Section are in addition to any liability that the Indemnifying Parties may have to the Indemnified Parties.

6. Miscellaneous.

(a) Remedies. In the event of a breach by the Company or by a Holder of any of their respective obligations under this Agreement, each Holder or the Company, as the case may be, in addition to being entitled to exercise all rights granted by law and under this Agreement, including recovery of damages, shall be entitled to specific performance of its rights under this Agreement. Each of the Company and each Holder agrees that monetary damages would not provide adequate compensation for any losses incurred by reason of a breach by it of any of the provisions of this Agreement and hereby further agrees that, in the event of any action for specific performance in respect of such breach, it shall not assert or shall waive the defense that a remedy at law would be adequate.

(b) Discontinued Disposition. By its acquisition of Registrable Securities, each Holder agrees that, upon receipt of a notice from the Company of the occurrence of any event of the kind described in Section 3(d)(iii) through (vi), such Holder will forthwith discontinue disposition of such Registrable Securities under a Registration Statement until it is advised in writing (the "Advice") by the Company that the use of the applicable Prospectus (as it may have been supplemented or amended) may be resumed. The Company will use its commercially reasonable efforts to ensure that the use of the Prospectus may be resumed as promptly as is practicable.

(c) Amendments and Waivers. The provisions of this Agreement, including the provisions of this sentence, may not be amended, modified or supplemented, and waivers or consents to departures from the provisions hereof may not be given, unless the same shall be in writing and signed by the Company and the Holders of 50.1% or more of the then outstanding Registrable Securities (for purposes of clarification, this includes any Registrable Securities issuable upon exercise or conversion of any Security), provided that, if any amendment, modification or waiver disproportionately and adversely impacts a Holder (or group of Holders), the consent of such disproportionately impacted Holder (or group of Holders) shall be required. If a Registration Statement does not register all of the Registrable Securities pursuant to a waiver or amendment done in compliance with the previous sentence, then the number of Registrable Securities to be registered for each Holder shall be reduced pro rata among all Holders and each Holder shall have the right to designate which of its Registrable Securities shall be omitted from such Registration Statement. Notwithstanding the foregoing, a waiver or consent to depart from the provisions hereof with respect to a matter that relates exclusively to the rights of a Holder or some Holders and that does not directly or indirectly affect the rights of other Holders may be given only by such Holder or Holders of all of the Registrable Securities to which such waiver or consent relates; provided, however, that the provisions of this sentence may not be amended, modified, or supplemented except in accordance with the provisions of the first sentence of this Section 6(c). No consideration shall be offered or paid to any Person to amend or consent to a waiver or modification of any provision of this Agreement unless the same consideration also is offered to all of the parties to this Agreement.

(d) Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be delivered as set forth in the Purchase Agreement.

(e) Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of each of the parties and shall inure to the benefit of each Holder. The Company may not assign (except by merger) its rights or obligations hereunder without the prior written consent of all of the Holders of the then outstanding Registrable Securities. Each Holder may assign their respective rights hereunder in the manner and to the Persons as permitted under Section 5.7 of the Purchase Agreement.

(f) No Inconsistent Agreements. Neither the Company nor any of its Subsidiaries has entered, as of the date hereof, nor shall the Company or any of its Subsidiaries, on or after the date of this Agreement, enter into any agreement with respect to its securities, that would have the effect of impairing the rights granted to the Holders in this Agreement or otherwise conflicts with the provisions hereof.

(g) Execution and Counterparts. 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 the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission or by email 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 facsimile or “.pdf” signature page were an original thereof.

(h) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be determined in accordance with the provisions of the Purchase Agreement.

(i) Cumulative Remedies. The remedies provided herein are cumulative and not exclusive of any other remedies provided by law.

(j) 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.

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

(l) Independent Nature of Holders’ Obligations and Rights. The obligations of each Holder hereunder are several and not joint with the obligations of any other Holder hereunder, and no Holder shall be responsible in any way for the performance of the obligations of any other Holder hereunder. Nothing contained herein or in any other agreement or document delivered at any closing, and no action taken by any Holder pursuant hereto or thereto, shall be deemed to constitute the Holders as a partnership, an association, a joint venture or any other kind of group or entity, or create a presumption that the Holders are in any way acting in concert or as a group or entity with respect to such obligations or the transactions contemplated by this Agreement or any other matters, and the Company acknowledges that the Holders are not acting in concert or as a group, and the Company shall not assert any such claim, with respect to such obligations or transactions. Each Holder shall be entitled to protect and enforce its rights, including without limitation the rights arising out of this Agreement, and it shall not be necessary for any other Holder to be joined as an additional party in any proceeding for such purpose. The use of a single agreement with respect to the obligations of the Company contained was solely in the control of the Company, not the action or decision of any Holder, and was done solely for the convenience of the Company and not because it was required or requested to do so by any Holder. It is expressly understood and agreed that each provision contained in this Agreement is between the Company and a Holder, solely, and not between the Company and the Holders collectively and not between and among Holders.

(Signature Pages Follow)

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

ACELRX PHARMACEUTICALS, INC.

By: /s/ Vincent J. Angotti

Name: Vincent J. Angotti

Title: Chief Executive Officer

[SIGNATURE PAGE TO REGISTRATION RIGHTS AGREEMENT]

Name of Holder: **LINCOLN PARK CAPITAL FUND, LLC**
By: **LINCOLN PARK CAPITAL FUND, LLC**
By: **ROCKLEDGE CAPso ITAL CORPORATION**

Signature of Authorized Signatory of Holder: /s/ Josh Scheinfeld

Name of Authorized Signatory: Josh Scheinfeld

Title of Authorized Signatory: President

PLAN OF DISTRIBUTION

The Selling Stockholder and any of its pledgees, assignees and successors-in-interest may, from time to time, sell any or all of the securities covered hereby on the principal Trading Market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. A Selling Stockholder may use any one or more of the following methods when selling securities:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- in transactions through broker-dealers that agree with the Selling Stockholders to sell a specified number of such securities at a stipulated price per security;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

A Selling Stockholder may also sell securities under Rule 144 or any other exemption from registration under the Securities Act of 1933, as amended, or the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by a Selling Stockholder may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from a Selling Stockholder (or, if any broker-dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121.

In connection with the sale of the securities or interests therein, a Selling Stockholder may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. A Selling Stockholder may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. A Selling Stockholder may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

A Selling Stockholder and any broker-dealers or agents that are involved in selling the securities may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each Selling Stockholder has informed us that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

We are required to pay certain fees and expenses incurred by us incident to the registration of the securities. We have agreed to indemnify any Selling Stockholder against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We agreed to keep this prospectus effective until the earlier of (i) the date on which the securities may be resold by the Selling Stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for us to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by a Selling Stockholder or any other person. We will make copies of this prospectus available to a Selling Stockholder and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

SELLING STOCKHOLDERS

The common stock being offered by the selling stockholder are those previously issued to the selling stockholder, and those issuable to the selling stockholder, upon conversion of the preferred stock and exercise of the warrants. For additional information regarding the issuances of those shares of common and preferred stock and warrants, see “Private Placement of Shares of Preferred Stock and Warrants” above. We are registering the shares of common stock in order to permit the selling shareholder to offer the shares for resale from time to time. Except for the ownership of the shares of common stock, preferred stock and the warrants, the selling shareholder has not had any material relationship with us within the past three years.

The table below lists the selling stockholder and other information regarding the beneficial ownership of the shares of common stock by the selling stockholder. The second column lists the number of shares of common stock beneficially owned by the selling stockholder, based on its ownership of the shares of common stock and warrants, as of _____, 2022, assuming conversion of the preferred stock and exercise of the warrants held by the selling stockholder on that date, without regard to any limitations on exercises.

The third column lists the shares of common stock being offered by this prospectus by the selling stockholder.

In accordance with the terms of a registration rights agreement with the selling stockholders, this prospectus generally covers the resale of the sum of (i) the number of shares of common stock issued to the selling stockholder described in the section titled “Private Placement of Shares of Preferred Stock and Warrants” above and (ii) the maximum number of shares of common stock issuable upon conversion of the related preferred stock and exercise of the related warrants, determined as if the outstanding shares of preferred stock and warrants were converted or exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration right agreement, without regard to any limitations on the conversion of the preferred stock or exercise of the warrants. The fourth column assumes the sale of all of the shares offered by the selling stockholder pursuant to this prospectus.

Under the terms of the preferred stock and warrants, a selling stockholder may not convert or exercise, as applicable, shares of preferred stock and/or warrants to the extent such exercise would cause such selling shareholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% or 9.99%, as applicable, of our then outstanding common stock following such exercise, excluding for purposes of such determination shares of common stock issuable upon conversion of such preferred stock and exercise of such warrants which have not been exercised. The number of shares in the second and fourth columns do not reflect this limitation. The selling stockholder may sell all, some or none of their shares in this offering. See “Plan of Distribution.”

Name of Selling Stockholder	Number of Shares of Common Stock Owned Prior to Offering	Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus	Number of Shares of Common Stock Owned After Offering

ACELRX PHARMACEUTICALS, INC.

SELLING STOCKHOLDER NOTICE AND QUESTIONNAIRE

The undersigned beneficial owner of common stock (the "Registrable Securities") of AcelRx Pharmaceuticals, Inc., a Delaware corporation (the "Company"), understands that the Company has filed or intends to file with the Securities and Exchange Commission (the "Commission") a registration statement (the "Registration Statement") for the registration and resale under Rule 415 of the Securities Act of 1933, as amended (the "Securities Act"), of the Registrable Securities, in accordance with the terms of the Registration Rights Agreement (the "Registration Rights Agreement") to which this document is annexed. A copy of the Registration Rights Agreement is available from the Company upon request at the address set forth below. All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Registration Rights Agreement.

Certain legal consequences arise from being named as a selling stockholder in the Registration Statement and the related prospectus. Accordingly, holders and beneficial owners of Registrable Securities are advised to consult their own securities law counsel regarding the consequences of being named or not being named as a selling stockholder in the Registration Statement and the related prospectus.

NOTICE

The undersigned beneficial owner (the "Selling Stockholder") of Registrable Securities hereby elects to include the Registrable Securities owned by it in the Registration Statement.

The undersigned hereby provides the following information to the Company and represents and warrants that such information is accurate:

QUESTIONNAIRE

1. Name.

(a) Full Legal Name of Selling Stockholder

(b) Full Legal Name of Registered Holder (if not the same as (a) above) through which Registrable Securities are held:

(c) Full Legal Name of Natural Control Person (which means a natural person who directly or indirectly alone or with others has power to vote or dispose of the securities covered by this Questionnaire):

2. Address for Notices to Selling Stockholder:

Telephone: _____

Email: _____

Contact Person: _____

3. Broker-Dealer Status:

(a) Are you a broker-dealer?

Yes No

(b) If "yes" to Section 3(a), did you receive your Registrable Securities as compensation for investment banking services to the Company?

Yes No

Note: If "no" to Section 3(b), the Commission's staff has indicated that you should be identified as an underwriter in the Registration Statement.

(c) Are you an affiliate of a broker-dealer?

Yes No

(d) If you are an affiliate of a broker-dealer, do you certify that you purchased the Registrable Securities in the ordinary course of business, and at the time of the purchase of the Registrable Securities to be resold, you had no agreements or understandings, directly or indirectly, with any person to distribute the Registrable Securities?

Yes No

Note: If "no" to Section 3(d), the Commission's staff has indicated that you should be identified as an underwriter in the Registration Statement.

4. Beneficial Ownership of Securities of the Company Owned by the Selling Stockholder.

Except as set forth below in this Item 4, the undersigned is not the beneficial or registered owner of any securities of the Company other than the securities issuable pursuant to the Purchase Agreement.

(a) Type and Amount of other securities beneficially owned by the Selling Stockholder:

5. Relationships with the Company:

Except as set forth below, neither the undersigned nor any of its affiliates, officers, directors or principal equity holders (owners of 5% of more of the equity securities of the undersigned) has held any position or office or has had any other material relationship with the Company (or its predecessors or affiliates) during the past three years.

State any exceptions here:

The undersigned agrees to promptly notify the Company of any material inaccuracies or changes in the information provided herein that may occur subsequent to the date hereof at any time while the Registration Statement remains effective; provided, that the undersigned shall not be required to notify the Company of any changes to the number of securities held or owned by the undersigned or its affiliates.

By signing below, the undersigned consents to the disclosure of the information contained herein in its answers to Items 1 through 5 and the inclusion of such information in the Registration Statement and the related prospectus and any amendments or supplements thereto. The undersigned understands that such information will be relied upon by the Company in connection with the preparation or amendment of the Registration Statement and the related prospectus and any amendments or supplements thereto.

IN WITNESS WHEREOF the undersigned, by authority duly given, has caused this Notice and Questionnaire to be executed and delivered either in person or by its duly authorized agent.

Date: _____

Beneficial Owner: _____

By: _____

Name:

Title:

PLEASE EMAIL A PDF COPY OF THE COMPLETED AND EXECUTED NOTICE AND QUESTIONNAIRE TO: [●]