

**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): September 14, 2021

ALPINE IMMUNE SCIENCES, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-37449
(Commission
File Number)

20-8969493
(IRS Employer
Identification No.)

188 East Blaine Street, Suite 200
Seattle, Washington 98102
(Address of principal executive offices, including zip code)

(206) 788-4545

(Registrant's telephone number, including area code)
N/A
(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:

- 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 Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value \$0.001 per share	ALPN	The Nasdaq Stock Market LLC

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

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 1.01. Entry into a Material Definitive Agreement

On September 14, 2021, Alpine Immune Sciences, Inc. (the “Company”) entered into a Securities Purchase Agreement (the “Securities Purchase Agreement”) for a private placement (the “Private Placement”) with a select group of institutional investors, including Frazier Life Sciences Public Fund, Decheng Capital, BVF Partners, TCG X, Avidity Partners, OrbiMed, Omega Fund, Logos Capital, and other accredited investors, four of which are affiliated with members of the board of directors of the Company (collectively, the “Purchasers”). Pursuant to the Securities Purchase Agreement, the Purchasers have agreed to purchase an aggregate of (a) 6,489,357 shares of the Company’s common stock, par value \$0.001 per share (the “Shares”), and (b) prefunded warrants to purchase 3,191,487 Shares (the “Prefunded Warrants”). The purchase price for each Share and for each Prefunded Warrant is \$9.40, for an aggregate purchase price of approximately \$91.0 million. The closing of the purchase and sale of the securities is expected to occur on or about September 17, 2021, subject to customary closing conditions.

The Prefunded Warrants will be exercisable at an exercise price of \$0.001 per share, subject to adjustments as provided under the terms of the Prefunded Warrants. The Prefunded Warrants will be exercisable at any time on or after the closing date, except that the Prefunded Warrants cannot be exercised if, after giving effect thereto, the Purchaser would beneficially own more than 9.99% (the “Maximum Percentage”) of the outstanding shares of common stock of the Company, which Maximum Percentage may be increased or decreased by the Purchaser with written notice to the Company to any other percentage specified not in excess of 19.99%.

The Company also entered into a registration rights agreement (the “Registration Rights Agreement”) with the Purchasers requiring the Company to register the resale of the Shares and the shares issuable upon exercise of the Prefunded Warrants. The Company is required to prepare and file a registration statement with the Securities and Exchange Commission (the “SEC”) on the date on which the Company files its Quarterly Report on Form 10-Q for the quarter ended September 30, 2021 (the “Filing Deadline”), and to use commercially reasonable efforts to have the registration statement declared effective within 25 days of the Filing Deadline if there is no review by the SEC, and within 90 days of the Filing Deadline in the event of such review.

The securities to be issued to the Purchasers under the Securities Purchase Agreement will be issued pursuant to an exemption from registration under Rule 506 of Regulation D, which is promulgated under the Securities Act of 1933 (the “Securities Act”). The Company relied on this exemption from registration based in part on representations made by the Purchasers.

The sale of the securities pursuant to the Securities Purchase Agreement has not been registered under the Securities Act or any state securities laws. The securities may not be offered or sold in the United States absent registration or an applicable exemption from registration requirements. Neither this Current Report on Form 8-K, nor the exhibits attached hereto is an offer to sell or the solicitation of an offer to buy the securities described herein.

The Company intends to use the net proceeds from the Private Placement to support the expansion of its pipeline, including the development of ALPN-303 in lupus and other B cell-mediated inflammatory diseases. In addition, net proceeds will be used to support the further clinical development of ALPN-202 as well as Alpine’s discovery programs and general corporate purposes.

The foregoing description of the material terms of the Private Placement is qualified in its entirety by reference to the Securities Purchase Agreement attached hereto as Exhibit 10.1, the Registration Rights Agreement attached hereto as Exhibit 10.2, and the Form of Prefunded Warrant to Purchase Common Stock attached hereto as Exhibit 10.3, each of which exhibits is incorporated by reference herein.

On September 14, 2021, the Company entered into an exchange agreement (the “Exchange Agreement”) with Frazier Life Sciences VIII, L.P. (the “Exchanging Stockholder”), which Exchanging Stockholder is affiliated with a member of the board of directors of the Company, pursuant to which the Company will exchange an aggregate of 1,200,000 shares of common stock held by the Exchanging Stockholder for Prefunded Warrants (the “Exchange Warrants”) to purchase an aggregate of 1,200,000 shares of common stock (subject to adjustment in the event of stock splits, recapitalizations and other similar events affecting common stock). After giving effect to the exchange of 1,200,000 shares of common stock for the Exchange Warrants and the Private Placement, the number of shares of the Company’s outstanding common stock immediately after this offering would be 29,204,236 as of July 30, 2021. The closing of the exchange is subject to customary closing conditions and is contingent upon and will occur immediately following the closing of the Private Placement.

The Exchange Warrants may be exercised at any time after the date of issuance and are identical in form to the Prefunded Warrants issued in the Private Placement. The Exchange Warrants were issued without registration under the Securities Act, in reliance on the exemption from registration contained in Section 3(a)(9) of the Securities Act.

The foregoing description of the material terms of the Exchange Agreement and the Exchange Warrant is qualified in its entirety by reference to the Exchange Agreement and the form of Prefunded Warrant, which are filed as Exhibit 10.4 and Exhibit 10.3, respectively, to this Current Report on Form 8-K and incorporated herein by reference.

Item 3.02. Unregistered Sales of Equity Securities

The information contained above under Item 1.01 is hereby incorporated by reference in response to this Item 3.02 of Form 8-K.

Item 7.01. Regulation FD Disclosure

On September 15, 2021, the Company issued a press release announcing its entry into the Securities Purchase Agreement with the Purchasers. A copy of the press release is being furnished as Exhibit 99.1 to this Report on Form 8-K.

The information in Item 7.01 of this Current Report on Form 8-K and Exhibit 99.1 attached hereto are being furnished and shall not be deemed “filed” for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liability of that section, nor shall such information be deemed incorporated by reference in any filing under the Exchange Act or the Securities Act of 1933, as amended, regardless of the general incorporation language of such filing, except as shall be expressly set forth by specific reference in such filing.

Item 9.01. Financial Statements and Exhibits

(d) Exhibits.

Exhibit No.	Description
10.1	Securities Purchase Agreement, dated September 14, 2021, by and among the Company and the Purchasers
10.2	Registration Rights Agreement, dated September 14, 2021, by and among the Company and the Purchasers
10.3	Form of Prefunded Warrant to Purchase Common Stock
10.4	Exchange Agreement, dated September 14, 2021, by and between the Company and Frazier Life Sciences VIII, L.P.
99.1	Press Release dated September 15, 2021
104	Cover Page Interactive Data File (formatted in Inline XBRL document)

SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this “*Agreement*”) is dated as of September 14, 2021, by and among Alpine Immune Sciences, Inc., a Delaware corporation (the “*Company*”), and each purchaser identified on the signature pages hereto (each, including its successors and permitted assigns, a “*Purchaser*” and collectively, the “*Purchasers*”).

RECITALS

A. The Company and each Purchaser is executing and delivering this Agreement in reliance upon the exemption from securities registration afforded by Section 4(a)(2) of the Securities Act of 1933, as amended (the “*Securities Act*”), and Rule 506 of Regulation D (“*Regulation D*”) as promulgated by the United States Securities and Exchange Commission (the “*Commission*”) under the Securities Act.

B. Each Purchaser, severally and not jointly, wishes to purchase, and the Company wishes to sell, upon the terms and conditions stated in this Agreement, (i) that aggregate number of shares of common stock, par value \$0.001 per share (the “*Common Stock*”), of the Company, set forth below such Purchaser’s name on the signature page of this Agreement (which aggregate amount for all Purchasers together shall be 6,489,357 shares of Common Stock and shall be collectively referred to herein as the “*Shares*”) and (ii) that aggregate number of prefunded Common Stock warrants, in substantially the form attached hereto as Exhibit A (the “*Prefunded Warrants*”), to acquire up to that number of shares of Common Stock set forth below such Purchaser’s name on the signature page of this Agreement (which aggregate number of shares of Common Stock issuable upon exercise of all Prefunded Warrants shall be 3,191,487 shares of Common Stock). The shares of Common Stock issuable upon exercise of or otherwise pursuant to the Prefunded Warrants collectively are referred to herein as the “*Prefunded Warrant Shares*”.

C. The Shares, the Prefunded Warrants and the Prefunded Warrant Shares collectively are referred to herein as the “*Securities*”.

D. Contemporaneously with the execution and delivery of this Agreement, the parties hereto are executing and delivering a Registration Rights Agreement, substantially in the form attached hereto as Exhibit B (the “*Registration Rights Agreement*”), pursuant to which, among other things, the Company will agree to provide certain registration rights with respect to the Shares and the Prefunded Warrant Shares under the Securities Act and the rules and regulations promulgated thereunder and applicable state securities laws.

E. Contemporaneously with the execution and delivery of this Agreement, certain of the parties or their Affiliates hereto are executing and delivering an Exchange Agreement substantially in the form attached hereto as Exhibit C (the “*Exchange Agreement*”), pursuant to which, among other things, the Company and certain Purchasers or their Affiliates will agree to exchange certain previously issued shares of Common Stock for additional Pre-Funded Warrants.

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 Purchasers hereby agree as follows:

ARTICLE I. DEFINITIONS

1.1 **Definitions.** In addition to the terms defined elsewhere in this Agreement, for all purposes of this Agreement, the following terms shall have the meanings indicated in this Section 1.1:

“*Acquiring Person*” has the meaning set forth in Section 4.6.

“*Affiliate*” means, with respect to any Person, any other Person that, directly or indirectly through one or more intermediaries, Controls, is controlled by or is under common control with such Person, as such terms are used in and construed under Rule 405 under the Securities Act. With respect to a Purchaser, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Purchaser will be deemed to be an Affiliate of such Purchaser.

“*Applicable Laws*” has the meaning set forth in Section 3.1(qq).

“*Agreement*” has the meaning set forth in the Preamble.

“*Authorizations*” has the meaning set forth in Section 3.1(qq).

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

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

“*Closing*” means the closing of the purchase and sale of the Shares and the Prefunded Warrants pursuant to this Agreement.

“*Closing Date*” means the Trading Day when all of the Transaction Documents have been executed and delivered by the applicable parties thereto, and all of the conditions set forth in Sections 2.1, 2.2, 5.1 and 5.2 hereof are satisfied or waived, as the case may be, or such other date as the parties may agree.

“*Commission*” has the meaning set forth in the Recitals.

“*Common Stock*” has the meaning set forth in the Recitals, and also includes any other class of securities into which the Common Stock may hereafter be reclassified or changed into.

“*Common Stock Equivalents*” means any securities of the Company or any Subsidiary 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 exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock or other securities that entitle the holder to receive, directly or indirectly, Common Stock.

“*Common Stock Subscription Amount*” means, with respect to each Purchaser, the aggregate amount to be paid for the Shares purchased hereunder as indicated on such Purchaser’s signature page to this Agreement next to the heading “Common Stock Subscription Amount” in United States dollars and in immediately available funds.

“*Common Stock Purchase Price*” means \$9.40 per Share.

“*Company*” has the meaning set forth in the Preamble.

“*Company Counsel*” means Wilson Sonsini Goodrich & Rosati, Professional Corporation.

“*Company Deliverables*” has the meaning set forth in [Section 2.2\(a\)](#).

“*Control*” (including the terms “controlling”, “controlled by” or “under common control with”) means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

“*DTC*” has the meaning set forth in [Section 4.1\(c\)](#).

“*Effective Date*” means the date on which the initial Registration Statement required by Section 2(a) of the Registration Rights Agreement is first declared effective by the Commission.

“*Environmental Laws*” has the meaning set forth in [Section 3.1\(dd\)](#).

“*Escrow Agent*” has the meaning set forth in [Section 2.1\(c\)](#).

“*Escrow Amount*” has the meaning set forth in [Section 2.1\(c\)](#).

“*Exchange Act*” means the Securities Exchange Act of 1934, as amended, or any successor statute, and the rules and regulations promulgated thereunder.

“*Existing Investors*” has the meaning set forth in [Section 3.2\(o\)](#).

“*FDA*” has the meaning set forth in [Section 3.1\(ll\)](#).

“*GAAP*” means U.S. generally accepted accounting principles, as applied by the Company.

“*Health Care Laws*” has the meaning set forth in [Section 3.1\(ll\)](#).

“*HIPAA*” has the meaning set forth in [Section 3.1\(qq\)](#).

“*Indemnified Person*” has the meaning set forth in [Section 4.9](#).

“*Intellectual Property Assets*” has the meaning set forth in [Section 3.1\(p\)](#).

“*Intellectual Property Rights*” has the meaning set forth in [Section 3.1\(p\)](#).

“*Investment Company Act*” has the meaning set forth in [Section 3.1\(w\)](#).

“*Irrevocable Transfer Agent Instructions*” means, with respect to the Company, the Irrevocable Transfer Agent Instructions, in the form of [Exhibit F](#), executed by the Company and delivered to and acknowledged in writing by the Transfer Agent.

“*Legacy Alpine*” has the meaning set forth in [Section 3.1\(p\)](#).

“*Legend Removal Date*” has the meaning set forth in [Section 4.1\(c\)](#).

“*Lock-Up Agreement*” has the meaning set forth in [Section 2.2\(a\)\(ix\)](#).

“*Material Adverse Effect*” has the meaning set forth in Section 3.1(b).

“*Money Laundering Laws*” has the meaning set forth in Section 3.1(pp).

“*Net Short Sale*” has the meaning set forth in Section 4.13.

“*New York Courts*” means the state and federal courts sitting in the City of New York, Borough of Manhattan.

“*OFAC*” has the meaning set forth in Section 3.1(kk).

“*Off-Balance Sheet Transaction*” has the meaning set forth in Section 3.1(gg).

“*Outside Date*” means the thirtieth day following the date of this Agreement.

“*Permits*” has the meaning set forth in Section 3.1(n).

“*Person*” means an individual, corporation, partnership, limited liability company, trust, business trust, association, joint stock company, joint venture, sole proprietorship, unincorporated organization, governmental authority or any other form of entity not specifically listed herein.

“*Prefunded Warrants*” has the meaning set forth in the Recitals to this Agreement.

“*Prefunded Warrant Shares*” has the meaning set forth in the Recitals.

“*Prefunded Warrant Subscription Amount*” means, with respect to each Purchaser, the aggregate amount to be paid for the Prefunded Warrants purchased hereunder as indicated on such Purchaser’s signature page to this Agreement next to the heading “Prefunded Warrant Subscription Amount” in United States dollars and in immediately available funds.

“*Prefunded Warrant Purchase Price*” means \$9.40 per Prefunded Warrant.

“*Prefunded Warrant Purchaser*” means any Purchaser whose signature page to this Agreement expressly references a Prefunded Warrant Subscription Amount. For the avoidance of doubt, any Purchaser whose signature page to this Agreement does not expressly reference a Prefunded Warrant Subscription Amount shall not be a Prefunded Warrant Purchaser hereunder and shall not be entitled to purchase or receive any Prefunded Warrants.

“*Press Release*” has the meaning set forth in Section 4.5.

“*Principal Trading Market*” means the Trading Market on which the Common Stock is primarily listed on and quoted for trading, which, as of the date of this Agreement and the Closing Date, shall be the Nasdaq Global Market.

“*Proceeding*” means an action, claim, suit, investigation or proceeding (including, without limitation, an investigation or partial proceeding, such as a deposition), whether commenced or threatened.

“*Purchaser*” or “*Purchasers*” has the meaning set forth in the Preamble.

“*Purchaser Deliverables*” has the meaning set forth in Section 2.2(b).

“*Purchaser Party*” has the meaning set forth in Section 4.9.

“*Registration Rights Agreement*” has the meaning set forth in the Recitals.

“*Registration Statement*” means a registration statement meeting the requirements set forth in the Registration Rights Agreement and covering the resale by the Purchasers of the Registrable Securities (as defined in the Registration Rights Agreement).

“*Regulation D*” has the meaning set forth in the Recitals.

“*Regulation S-X*” has the meaning set forth in Section 3.1(i).

“*Regulatory Authorities*” has the meaning set forth in Section 3.1(oo).

“*Required Approvals*” has the meaning set forth in Section 3.1(e).

“*Restricted Period*” has the meaning set forth in Section 4.14.

“*Rule 144*” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“*Sarbanes-Oxley Act*” has the meaning set forth in Section 3.1(s).

“*SEC Reports*” has the meaning set forth in Section 3.1(h).

“*Secretary’s Certificate*” has the meaning set forth in Section 2.2(a)(vii).

“*Securities*” has the meaning set forth in the Recitals.

“*Securities Act*” has the meaning set forth in the Recitals.

“*Shares*” has the meaning set forth in the Recitals.

“*Short Sales*” include, without limitation, (i) all “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act, whether or not against the box, and all types of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) and similar arrangements (including on a total return basis), and (ii) sales and other transactions through non-U.S. broker dealers or foreign regulated brokers (but shall not be deemed to include the location and/or reservation of borrowable shares of Common Stock).

“*Subscription Amount*” means the Common Stock Subscription Amount and the Prefunded Warrant Subscription Amount.

“*Subsidiaries*” means the consolidated subsidiaries of the Company.

“*Threshold Amount*” means 19.99% of the outstanding shares of Common Stock or the voting power of the Company.

“*Trading Affiliate*” has the meaning set forth in Section 3.2(i).

“*Trading Day*” means (i) a day on which the Common Stock is listed or quoted and traded on its Principal Trading Market (other than the OTC Bulletin Board), or (ii) if the Common Stock is not listed on a Trading Market (other than the OTC Bulletin Board), a day on which the Common Stock is traded in the over-the-counter market, as reported by the OTC Bulletin Board, or (iii) if the Common Stock is not quoted on any Trading Market, a day on which the Common Stock is quoted in the over-the-counter market as reported in the “pink sheets” by Pink Sheets LLC (or any similar organization or agency succeeding to its functions of reporting prices); *provided*, that in the event that the Common Stock is not listed or quoted as set forth in (i), (ii) and (iii) hereof, then Trading Day shall mean a Business Day.

“*Trading Market*” means whichever of the New York Stock Exchange, the NYSE MKT, the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market or the OTC Bulletin Board on which the Common Stock is listed or quoted for trading on the date in question.

“*Transaction Documents*” means this Agreement, the schedules and exhibits attached hereto, the Prefunded Warrants, the Registration Rights Agreement, the Exchange Agreement, the Irrevocable Transfer Agent Instructions and any other documents or agreements explicitly contemplated hereunder.

“*Transfer Agent*” means Broadridge Corporate Issuer Solutions, Inc., the current transfer agent of the Company, with a mailing address of 1717 Arch St., Suite 1300 Philadelphia, PA 191036, or any successor transfer agent for the Company.

“*Treasury*” has the meaning set forth in Section 3.2(g).

“*XBRL*” has the meaning set forth in Section 3.1(i).

ARTICLE II. PURCHASE AND SALE

2.1 Closing.

(a) Amount. Subject to the terms and conditions set forth in this Agreement, at the Closing, the Company shall issue and sell to each Purchaser, and each Purchaser shall, severally and not jointly, purchase from the Company, (i) such number of shares of Common Stock equal to the quotient resulting from dividing (1) the Common Stock Subscription Amount for such Purchaser by (2) the Common Stock Purchase Price, rounded down to the nearest whole share of Common Stock; and (ii) with respect to Prefunded Warrant Purchasers only, a Prefunded Warrant to purchase a number of Prefunded Warrant Shares equal to the quotient resulting from dividing (1) the Prefunded Warrant Subscription Amount for such Prefunded Warrant Purchaser by (2) the Prefunded Warrant Purchase Price, rounded down to the nearest whole number of Prefunded Warrant Shares. The Prefunded Warrants shall have an exercise price equal to \$0.001 per Prefunded Warrant Share.

(b) Closing. The Closing of the purchase and sale of the Shares and Prefunded Warrants shall take place at the offices of Cooley LLP, 1700 Seventh Avenue, Suite 1900, Seattle, WA 98101, on the Closing Date or at such other locations or remotely by facsimile transmission or other electronic means as the parties may mutually agree.

(c) Form of Payment. Except as may otherwise be agreed to among the Company and one or more of the Purchasers, on or prior to the Business Day immediately prior to the Closing Date, each

Purchaser shall wire its Subscription Amount, in United States dollars and in immediately available funds, to a non-interest bearing escrow account established by the Company with American Stock Transfer & Trust Company, LLC (the “Escrow Agent”) as set forth on Exhibit I hereto (the aggregate amounts received being held in escrow by the Escrow Agent are referred to herein as the “Escrow Amount”). On the Closing Date, (a) the Company shall instruct the Escrow Agent to deliver, in immediately available funds, the Escrow Amount to the Company, (b) the Company shall irrevocably instruct the Transfer Agent to issue to each Purchaser in book-entry form in an amount equal to the number of Shares such Purchaser is purchasing, free and clear of all restrictive and other legends (except as expressly provided in Section 4.1(b) hereof), the number of Shares such Purchaser is purchasing as is set forth on such Purchaser’s signature page to this Agreement next to the heading “Number of Shares to be Acquired”, respectively, within one (1) Trading Day after the Closing; and (c) the Company shall deliver to each Prefunded Warrant Purchaser one or more Prefunded Warrants in physical form, free and clear of all restrictive and other legends (except as expressly provided in Section 4.1(b) hereof or in Exhibit A), evidencing the number of Prefunded Warrants such Prefunded Warrant Purchaser is purchasing as is set forth on such Prefunded Warrant Purchaser’s signature page to this Agreement next to the heading “Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired”, within three (3) Trading Days after the Closing.

2.2 Closing Deliveries. On or prior to the Closing, the Company shall issue, deliver or cause to be delivered to each Purchaser the following (the “Company Deliverables”):

(i) this Agreement, duly executed by the Company;

(ii) with respect to the Prefunded Warrant Purchasers only, facsimile copies of the Prefunded Warrants, executed by the Company and registered in the name of such Purchaser as set forth on the Book-Entry Questionnaire included as Exhibit D-2 hereto, pursuant to which such Prefunded Warrant Purchaser shall have the right to acquire such number of Prefunded Warrant Shares as is set forth on such Prefunded Warrant Purchaser’s signature page to this Agreement next to the heading “Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired”, on the terms set forth therein, with the original Prefunded Warrants delivered within three (3) Trading Days of Closing; *provided, however*, that the receipt of such facsimile copies shall be conditioned on the Company receiving a completed Book-Entry Questionnaire from such Prefunded Warrants Purchaser no later than 3:00 p.m., Eastern time, on the Business Day prior to the Closing Date;

(iii) a legal opinion of Company Counsel, dated as of the Closing Date and in the form attached hereto as Exhibit E, executed by such counsel and addressed to the Purchasers;

(iv) the Registration Rights Agreement, duly executed by the Company;

(v) the Exchange Agreement, duly executed by the Company;

(vi) duly executed Irrevocable Transfer Agent Instructions instructing the Transfer Agent to deliver a book-entry statement evidencing the number of Shares equal to such Purchaser’s shares of Common Stock set forth below such Purchaser’s name on the signature page of this Agreement, registered in the name of such Purchaser;

(vii) a certificate of the Secretary of the Company (the “Secretary’s Certificate”), dated as of the Closing Date, (a) certifying the resolutions adopted by the Board of Directors of the Company or a duly authorized committee thereof approving the transactions contemplated by this Agreement and the other Transaction Documents and the issuance of the Securities, (b) certifying the current versions of the certificate of incorporation, as amended, and bylaws of the Company and (c) certifying as to the signatures

and authority of persons signing the Transaction Documents and related documents on behalf of the Company, in the form attached hereto as Exhibit G;

(viii) the Compliance Certificate referred to in Section 5.1(i);

(ix) a Lock-Up Agreement, substantially in the form of Exhibit J hereto (the “*Lock-Up Agreement*”) executed by each person listed on Exhibit K hereto, and each such Lock-Up Agreement shall be in full force and effect on the Closing Date;

(x) a certificate evidencing the good standing of the Company issued by the Secretary of State of the State of Delaware, as of a date within five (5) Business Days of the Closing Date;

(xi) a certificate of existence and authorization issued by the Secretary of State of the State of Washington, as of a date within five (5) Business Days of the Closing Date; and

(xii) a certified copy of the Certificate of Incorporation of the Company, as certified by the Secretary of State of the State of Delaware, as of a date within five (5) Business Days of the Closing Date.

(b) On or prior to the Closing, each Purchaser shall deliver or cause to be delivered to the Company the following (the “*Purchaser Deliverables*”):

(i) this Agreement, duly executed by such Purchaser;

(ii) its Subscription Amount, in United States dollars and in immediately available funds, in the amount set forth as the “Common Stock Subscription Amount” or “Prefunded Warrant Subscription Amount”, as the case may be, indicated below such Purchaser’s name on the applicable signature page hereto by wire transfer to the Escrow Account, as set forth on Exhibit I attached hereto, which Subscription Amount must be wired no later than the Business Day immediately prior to the Closing Date;

(iii) the Registration Rights Agreement, duly executed by such Purchaser;

(iv) a fully completed and duly executed Selling Stockholder Notice and Questionnaire in the form attached as Annex B to the Registration Rights Agreement; and

(v) a fully completed and duly executed Accredited Investor Questionnaire, satisfactory to the Company, and Book-Entry Questionnaire in the forms attached hereto as Exhibits D-1 and D-2, respectively, which Accredited Investor Questionnaire and Book-Entry Questionnaire must be received by the Company no later than 3:00 p.m., Eastern time, on the Business Day immediately prior to the Closing Date.

ARTICLE III. REPRESENTATIONS AND WARRANTIES

3.1 Representations and Warranties of the Company. Except as disclosed in the SEC Reports, the Company hereby represents and warrants as of the date hereof and the Closing Date (except for the representations and warranties that speak as of a specific date, which shall be made as of such date), to each of the Purchasers:

(a) Subsidiaries. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company’s

Annual Report on Form 10-K for the fiscal year ended December 31, 2020 except for subsidiaries that in the aggregate would not constitute a “significant subsidiary” (as defined in Rule 405 under the Securities Act). The Company’s wholly-owned subsidiary, AIS Operating Co., Inc., is a “significant subsidiary” (as defined in Rule 405 under the Securities Act).

(b) Organization and Qualification. The Company and each of its Subsidiaries have been duly organized, are validly existing as corporations or limited liability entities and are in good standing under the laws of their respective jurisdictions of organization, except where the failure to be so duly organized, validly existing and in good standing would not reasonably be expected to have a Material Adverse Effect. The Company and each of its Subsidiaries are, and will be, duly licensed or qualified as a foreign corporation for the transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the SEC Reports, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or would reasonably be expected to have a material adverse effect on or affecting the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders’ equity or results of operations of the Company and the Subsidiaries taken as a whole, or prevent or materially interfere with the consummation of the transactions contemplated hereby (a “*Material Adverse Effect*”); *provided, however*, that any of the following, either alone or in combination, shall not be deemed a Material Adverse Effect: (i) effects caused by changes or circumstances affecting general market conditions in the U.S. economy or which are generally applicable to the industry in which the Company operates, *provided* that such effects are not borne disproportionately by the Company, (ii) effects resulting from or relating to the announcement or disclosure of the sale of the Securities or other transactions contemplated by the Transaction Documents, or (iii) effects caused by any event, occurrence or condition resulting from or relating to the taking of any action in accordance with the Transaction Documents.

(c) Authorization. The Company has all requisite corporate power and authority to execute, deliver and perform its obligations contemplated by each of the Transaction Documents to which it is a party. Each of the Transaction Documents to which the Company is a party has been duly and validly authorized, executed and delivered by the Company.

(d) No Conflicts. The issue and sale of the Shares and the Prefunded Warrants and the reservation for issuance and issuance of the Prefunded Warrant Shares, the execution, delivery and performance of the Transaction Documents to which the Company is a party and the consummation of the transactions contemplated by the Transaction Documents will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, impose any lien, charge or encumbrance upon any property or assets of the Company and its Subsidiaries, or constitute a default under, any indenture, mortgage, deed of trust, loan agreement, license, lease or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its Subsidiaries is bound or to which any of the property or assets of the Company or any of its Subsidiaries is subject; (ii) result in any violation of the provisions of the certificate of incorporation, charter or bylaws (or similar organizational documents) of the Company or any of its Subsidiaries; or (iii) result in any violation of any statute or any judgment, order, decree, rule or regulation of any court or governmental agency or body having jurisdiction over the Company or any of its Subsidiaries or any of their properties or assets, except, with respect to clauses (i) and (iii), for such conflicts, breaches, violations, liens, charges, encumbrances or defaults that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(e) Filings, Consents and Approvals. No consent, approval, authorization or order of, or filing, registration or qualification with, any court or governmental agency or body having jurisdiction over the Company or any of its Subsidiaries or any of their respective properties or assets is required for the issue and sale of the Securities, the execution, delivery and performance by the Company of the Transaction Documents to which the Company is a party, the consummation of the transactions contemplated by the Transaction Documents, except for (i) such consents, approvals, authorizations, orders, filings, registrations or qualifications as may be required under the Exchange Act, (ii) the filing with the Commission of one or more Registration Statements in accordance with the requirements of the Registration Rights Agreement, (iii) filings required by applicable state or foreign securities laws, (iv) the filing of a Notice of Sale of Securities on Form D with the Commission under Regulation D of the Securities Act, (v) the filing of any requisite notices and/or application(s) to the Principal Trading Market for the issuance and sale of the Securities and the listing of the Shares and the Prefunded Warrant Shares for trading or quotation, as the case may be, thereon in the time and manner required thereby, (vi) the filings required in accordance with Section 4.5 of this Agreement and (vii) those that have been made or obtained prior to the date of this Agreement (collectively, the “*Required Approvals*”).

(f) Issuance of the Securities. The Shares have been duly authorized and, when issued and paid for in accordance with the terms of the Transaction Documents, will be duly authorized and validly issued, fully paid and nonassessable and free and clear of all liens, other than restrictions on transfer provided for in the Transaction Documents or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights. The Prefunded Warrants have been duly authorized and, when issued and paid for in accordance with the terms of the Transaction Documents, will be duly authorized and validly issued, free and clear of all liens, other than restrictions on transfer provided for in the Transaction Documents or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights. The Prefunded Warrant Shares issuable upon exercise of the Prefunded Warrants have been duly authorized and, when issued and paid for in accordance with the terms of the Transaction Documents and the Prefunded Warrants, will be duly authorized and validly issued, fully paid and nonassessable, free and clear of all liens, other than restrictions on transfer provided for in the Transaction Documents or imposed by applicable securities laws, and shall not be subject to preemptive or similar rights. Assuming the accuracy of the representations and warranties of the Purchasers in this Agreement, the Securities will be issued in compliance with all applicable federal and state securities laws. As of the Closing Date, the Company shall have reserved from its duly authorized capital stock the number of shares of Common Stock issuable upon exercise of the Prefunded Warrants (without taking into account any limitations on the exercise of the Prefunded Warrants set forth in the Prefunded Warrants). The Company shall, so long as any of the Prefunded Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued capital stock, solely for the purpose of effecting the exercise of the Prefunded Warrants, the number of shares of Common Stock issuable upon exercise of the Prefunded Warrants (without taking into account any limitations on the exercise of the Prefunded Warrants set forth in the Prefunded Warrants).

(g) Capitalization. The authorized capital of the Company consists of 200,000,000 shares of Common Stock, 23,914,879 of which are issued and outstanding as of June 30, 2021, and 10,000,000 shares of preferred stock, par value \$0.001 per share, none of which are currently issued and outstanding as of June 30, 2021. Under the Company’s Plans (as defined below) (i) options to acquire 5,621,597 shares of Common Stock have been granted and are currently outstanding as of June 30, 2021, (ii) no restricted shares of Common Stock have been granted and are currently outstanding as of June 30, 2021, (iii) zero shares of Common Stock have been reserved for issuance as of June 30, 2021 upon the settlement of outstanding restricted stock units granted under the Company’s Plans, (iv) 736,197 shares of Common Stock remain available for future issuance as of June 30, 2021 to directors, executive officers, employees and consultants of the Company pursuant to the Company’s 2018 Equity Incentive Plan, as amended, (the “*2018 Plan*”), and (v) 45,211 shares of Common Stock have been reserved for issuance as of June 30, 2021 under

the Company's Employee Stock Purchase Plan. Since June 30, 2021, the Company has not issued any equity securities, other than those issued pursuant to the 2018 Plan and any of the Company's other equity incentive plans disclosed in the SEC Reports (including employee stock purchase plans and any inducement equity plans or awards established in compliance with Nasdaq Marketplace Rules) (collectively, together with the 2018 Plan, the "Plans"). The Company has outstanding warrants to purchase 4,459,629 shares of Common Stock as of June 30, 2021 (the "Outstanding Warrants"). Except as set forth in the Company SEC Reports, and other than the shares of Common Stock reserved for issuance under the 2018 Plan and the Outstanding Warrants, there are no outstanding options, rights (including conversion or preemptive rights and rights of first refusal), proxy or shareholder agreements, or agreements of any kind for the purchase or acquisition from the Company of any of its securities. The Company has an authorized capitalization as set forth in the SEC Reports, and all of the issued shares of the Company have been duly authorized and validly issued, are fully paid and non-assessable, conform in all material respects to the description thereof contained in the SEC Reports and were not issued in violation of any preemptive right, resale right, right of first refusal or similar right. All of the Company's options, warrants and other rights to purchase or exchange any securities for shares of the Company's capital stock have been duly authorized and validly issued, and conform in all material respects to the description thereof contained in the SEC Reports. All of the issued shares of capital stock or other ownership interests of each Subsidiary of the Company have been duly authorized and validly issued, are fully paid and non-assessable and are owned directly or indirectly by the Company, free and clear of all liens, encumbrances, equities or claims, except for such liens, encumbrances, equities or claims as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. No Person is entitled to preemptive rights, rights of first refusal, rights of participation or similar rights with respect to any securities of the Company, including with respect to the issuance of Shares contemplated hereby. Except as set forth in the Company SEC Documents, there are no voting agreements, registration rights agreements or other agreements of any kind between the Company and any other Person relating to the securities of the Company, including the Securities.

(h) **SEC Reports.** The Company has filed all reports, schedules, forms, statements and other documents required to be filed by it under 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") on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension, except where the failure to file on a timely basis would not have or reasonably be expected to result in a Material Adverse Effect (including, for this purpose only, any failure to qualify to register the Shares and the Prefunded Warrant Shares for resale or which would prevent any Purchaser from using Rule 144 to resell any Securities). As of their respective filing dates, or to the extent corrected by a subsequent restatement, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act and the rules and regulations of the Commission promulgated thereunder, 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 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.

(i) **Financial Statements.** The historical financial statements (including the related notes and supporting schedules) included in the SEC Reports comply as to form in all material respects with the requirements of Regulation S-X under the Securities Act ("Regulation S-X") and present fairly, in all material respects, the financial condition, results of operations and cash flows of the entities purported to be shown thereby at the dates and for the periods indicated and have been prepared in conformity with GAAP applied on a consistent basis throughout the periods involved. All disclosures contained in the SEC Reports regarding "non-GAAP financial measures" (as defined by the rules and regulations of the Commission)

comply with Regulation G of the Exchange Act and Item 10 of Regulation S-K of the Securities Act, to the extent applicable. There are no financial statements (historical or pro forma) that are required to be included in the SEC Reports that are not so included as required. The interactive data in eXtensible Business Reporting Language (“XBRL”) included or incorporated by reference in the SEC Reports fairly present the information called for in all material respects and have been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

(j) Material Changes. Except as would not, in the aggregate, reasonably be expected to have a Material Adverse Effect, since the date of the latest audited financial statements included in the SEC Reports, and, except as disclosed in a subsequent SEC Report filed prior to the date hereof, neither the Company nor any of its Subsidiaries has (i) sustained any loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, (ii) issued or granted any securities (other than pursuant to employee benefit plans, qualified stock option plans or other equity compensation plans or arrangements existing on the date hereof and disclosed in the SEC Reports), (iii) incurred any material liability or obligation, direct or contingent, other than liabilities and obligations that were incurred in the ordinary course of business, (iv) entered into any material transaction not in the ordinary course of business, or (v) declared or paid any dividend on its share capital; and since such date, except as disclosed in the SEC Reports, there has not been any change in the share capital, long-term debt, net current assets or short-term debt of the Company or any of its Subsidiaries or any adverse change, or any development involving a prospective adverse change, in or affecting the condition (financial or otherwise), prospects, results of operations, stockholders’ equity, properties, management or business of the Company and its Subsidiaries taken as a whole.

(k) Litigation. Except as disclosed in the SEC Reports, there are no legal or governmental proceedings pending to which the Company or any of its Subsidiaries is a party or of which any property or assets of the Company or any of its Subsidiaries is the subject that, if determined adversely to the Company, would, in the aggregate, reasonably be expected to have a Material Adverse Effect or would, in the aggregate, reasonably be expected to have a material adverse effect on the performance of the Transaction Documents or the consummation of the transactions contemplated by the Transaction Documents; and to the Company’s knowledge, no such proceedings are threatened or contemplated by governmental authorities or others.

(l) No Labor Dispute; Compliance with Labor Laws. No labor disturbance by or dispute with the employees of the Company or any of its Subsidiaries exists or, to the knowledge of the Company, is imminent that could reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its Subsidiaries is in violation of or has received written notice of any violation with respect to any federal or state law relating to discrimination in the hiring, promotion or pay of employees, nor any applicable federal or state wage and hour laws, nor any state law precluding the denial of credit due to the neighborhood in which a property is situated, the violation of any of which could reasonably be expected to have a Material Adverse Effect.

(m) No Default. Except as disclosed in the SEC Reports, neither the Company nor any of its Subsidiaries (i) is in violation of its certificate of incorporation, charter or bylaws (or similar organizational documents), (ii) is in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant, condition or other obligation contained in any indenture, mortgage, deed of trust, loan agreement, license or other agreement or instrument to which it is a party, by which it is bound or to which any of its properties or assets is subject, (iii) is in violation of any statute or any order, rule or regulation of any court or governmental agency or body having jurisdiction over it or its property or assets or (iv) has failed to obtain any license, permit, certificate, franchise or other governmental authorization or permit necessary to the ownership of its

property or to the conduct of its business, except in the case of clauses (ii) and (iii), to the extent any such conflict, breach, violation or default would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(n) Regulatory Permits. The Company and its Subsidiaries possess all material certificates, authorizations, clearances, approvals, registrations, exemptions, licenses or permits required by state, federal or foreign regulatory agencies or bodies to conduct their respective businesses as currently conducted and as described in the SEC Reports (“*Permits*”), and all such Permits are valid, current and in full force and effect, except where the failure to so possess or be valid, current and in full force and effect would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect. Neither the Company nor any of its Subsidiaries is in violation of, or in default under, any of the Permits or has received any notice of proceedings relating to the revocation or modification of, or non-compliance with, any such certificate, authorization or permit. Neither the Company nor any of its Subsidiaries has received any notice of proceedings relating to the revocation or modification of any Permits which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would reasonably be expected to result in a Material Adverse Effect. The Company has not received any written notice denying, revoking or modifying any “approved enterprise,” “benefited enterprise” or “preferred enterprise” status with respect to any of the Company’s facilities or operations.

(o) Title to Assets. The Company and each of its Subsidiaries have good and marketable title in fee simple to all real property and good and marketable title to all personal property owned by them, that are material to the business of the Company, in each case free and clear of all liens, encumbrances and defects, except for such liens, encumbrances and defects 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 its Subsidiaries. All assets held under lease by the Company and its Subsidiaries, that are material to the business of the Company, are held by them under valid, subsisting and enforceable leases, with such exceptions as do not materially interfere with the use made and proposed to be made of such assets by the Company and its Subsidiaries.

(p) Patents and Trademarks. To the knowledge of the Company, the Company and its Subsidiaries own or possess the valid right to use all (i) patents, patent applications, trademarks, trademark registrations, service marks, service mark registrations, internet domain name registrations, copyrights, copyright registrations, licenses and trade secret rights (collectively, “*Intellectual Property Rights*”) and (ii) inventions, software, works of authorships, trademarks, service marks, trade names, databases, formulae, know how, Internet domain names and other intellectual property (including trade secrets and other unpatented and/or unpatentable proprietary confidential information, systems, or procedures) (collectively, “*Intellectual Property Assets*”) necessary to conduct their respective businesses as currently conducted, and as proposed to be conducted and described in the SEC Reports. The Company and its subsidiaries have not received written notice of any challenge, which is still pending, by any other person to the rights of the Company and its Subsidiaries with respect to any Intellectual Property Rights or Intellectual Property Assets owned or used by the Company or its Subsidiaries, except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. To the knowledge of the Company, the Company and its Subsidiaries’ respective businesses as now conducted do not give rise to any material infringement of, any material misappropriation of, or other material violation of, any valid and enforceable Intellectual Property Rights of any other person. To the knowledge of the Company, all licenses for the use of the Intellectual Property Rights described in the SEC Reports are valid, binding upon and enforceable by or against the parties thereto in accordance with their terms. The Company has complied in all material respects with, and is not in breach nor has received any asserted or threatened claim of material breach of any Intellectual Property license, and the Company has no knowledge of any material breach by any other person to any Intellectual Property license to which the Company is a party. No claim has been made, and is

currently pending, against the Company alleging the infringement by the Company of any patent, trademark, service mark, trade name, copyright, trade secret, license in or other Intellectual Property Right or franchise right of any person, and, to the knowledge of the Company, there are no facts that would form a reasonable basis for such claim, except as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Company has taken all reasonable steps to protect, maintain and safeguard its Intellectual Property Rights, including the execution of appropriate nondisclosure and confidentiality agreements. The consummation of the transactions contemplated hereby will not result in the loss or impairment of or payment of any additional amounts with respect to, nor require the consent of any other person in respect of, the Company's right to own, use, or hold for use any of the Intellectual Property Rights as owned, used or held for use in the conduct of the business as currently conducted. To the knowledge of the Company, no employee of Legacy Alpine and, since July 24, 2017, no employee of the Company is in, or has ever been, in violation in any material respect of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, non-disclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with the Company, or actions undertaken by the employee while employed with the Company. For purposes of this section, "Legacy Alpine" means Alpine Immune Sciences, Inc., which was the surviving entity following its merger with a wholly-owned subsidiary of Nivalis Therapeutics, Inc. on July 24, 2017 and renamed as AIS Operating Co., Inc.

(q) Insurance. Except as would not reasonably be expected to have a Material Adverse Effect, the Company and each of its Subsidiaries maintain insurance from nationally recognized, in the applicable country, insurers in such amounts and covering such risks as is commercially reasonable in accordance with customary practices for companies engaged in similar businesses and similar industries for the conduct of their respective businesses and the value of their respective properties and as is customary for companies engaged in similar businesses in similar industries. All insurance policies of the Company and its Subsidiaries are in full force and effect; the Company and each of its Subsidiaries are in compliance with the terms of such policies in all material respects; neither the Company nor any of its Subsidiaries has received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance; there are no material claims by the Company or any of its Subsidiaries under any such policy or instrument as to which any insurance company is denying liability or defending under a reservation of rights clause; and neither the Company nor any such 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 at a cost that would not reasonably be expected to have a Material Adverse Effect.

(r) Transactions With Affiliates and Employees. No relationship, direct or indirect, exists between or among the Company, on the one hand, and the directors, officers, stockholders, customers or suppliers of the Company, on the other hand, that is required to be described in the SEC Reports that is not so described.

(s) Internal Accounting Controls. The Company and each of its Subsidiaries maintain internal accounting controls designed to provide reasonable assurances regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP, including, but not limited to, internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorization, (ii) transactions are recorded as necessary to permit preparation of the Company's financial statements in conformity with GAAP and to maintain accountability for its assets, (iii) access to the Company's assets is permitted only in accordance with management's general or specific authorization, (iv) the recorded accountability for the Company's assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences, and (v) the interactive data in XBRL included or incorporated by reference in

the SEC Reports fairly present the information called for in all material respects and are prepared in accordance with the Commission's rules and guidelines applicable thereto (it being understood that this subsection shall not require the Company to comply with Section 404 of the Sarbanes-Oxley Act of 2002, as amended, and the rules and regulations promulgated thereunder (collectively, the "*Sarbanes-Oxley Act*") as of an earlier date than it would otherwise be required to so comply under applicable law). Except as disclosed in the SEC Reports, as of the date of the most recent balance sheet of the Company and its consolidated subsidiaries audited by Ernst & Young LLP, there were no material weaknesses in the Company's internal controls.

(t) Sarbanes-Oxley Compliance. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act that are applicable to the Company or its directors or officers in their capacities as directors or officers of the Company.

(u) No Other Brokers. Neither the Company nor any of its Subsidiaries is a party to any contract, agreement or understanding with any person that would give rise to a valid claim against any of them for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Securities.

(v) Private Placement. Assuming the accuracy of the Purchasers' representations and warranties set forth in Section 3.2 of this Agreement and the accuracy of the information disclosed in the Accredited Investor Questionnaires provided by the Purchasers, no registration under the Securities Act is required for the offer and sale of the Securities by the Company to the Purchasers under the Transaction Documents. Assuming the making and the obtaining of the Required Approvals, the issuance and sale of the Securities hereunder does not contravene the rules and regulations of the Trading Market.

(w) Investment Company. The Company is not, and will not be, after giving effect to the offer and sale of the Securities and the application of the proceeds therefrom as described in Section 4.8, (i) required to register as an "investment company" (within the meaning of the Investment Company Act of 1940, as amended (the "*Investment Company Act*")) or (ii) a "business development company" (as defined in Section 2(a)(48) of the Investment Company Act).

(x) Registration Rights. Except as disclosed in the SEC Reports and other than each of the Purchasers, there are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company to file a registration statement under the Securities Act with respect to any securities of the Company owned or to be owned by such person. There are no contracts, agreements or understandings to require the Company to include any such securities in the Securities proposed to be offered pursuant to the Transaction Documents, except for such contracts, agreements or understandings that have been validly waived in writing prior to the date hereof.

(y) Exchange Act Registration and Listing of the Common Stock. The Company's Common Stock is registered pursuant to Section 12(b) of the Exchange Act and listed on the Principal Trading Market; the Company has taken no action designed to, or reasonably likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Principal Trading Market, nor has the Company received any notification that the Commission or FINRA is contemplating terminating such registration or listing.

(z) Application of Takeover Protections; Rights Agreements. 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 charter documents or the laws of its state of incorporation that is or could reasonably be expected to become applicable to any of the Purchasers as a result of the Purchasers and the Company fulfilling their obligations or exercising their rights under the Transaction Documents, including, without limitation, the Company's issuance of the Securities and the Purchasers' ownership of the Securities.

(aa) Disclosure. The Company confirms that it has not provided, and to the knowledge of the Company, none of its officers or directors nor any other Person acting on its or their behalf has provided, any Purchaser or its respective agents or counsel with any information that it believes constitutes material, non-public information regarding the Company or its Subsidiaries except (i) insofar as the existence, provisions and terms of the Transaction Documents and the proposed transactions hereunder may constitute such information, all of which will be disclosed by the Company in the Press Release as contemplated by Section 4.5 hereof or (ii) to such Purchaser, prior to such disclosure, that has executed a written agreement regarding the confidentiality and use of such information. The Company understands and confirms that the Purchasers will rely on the foregoing representations in effecting transactions in securities of the Company.

(ab) No Integrated Offering. Assuming the accuracy of the Purchasers' representations and warranties set forth in Section 3.2, none of the Company, its Subsidiaries nor, to the knowledge of the Company, any of its Affiliates or any Person acting on its behalf has, directly or indirectly, at any time within the past six (6) months, made any offers or sales of any Company security or solicited any offers to buy any security under circumstances that would (i) eliminate the availability of the exemption from registration under Regulation D under the Securities Act in connection with the offer and sale by the Company of the Securities as contemplated hereby or (ii) cause the offering of the Securities pursuant to the Transaction Documents to be integrated with prior offerings by the Company for purposes of any applicable law, regulation or stockholder approval provisions, including, without limitation, under the rules and regulations of any Trading Market on which any of the securities of the Company are listed or designated.

(ac) Tax Matters. The Company and each of its Subsidiaries have filed all federal, state, local and foreign tax returns required to be filed through the date hereof, subject to permitted extensions (except where the failure to file would not individually or in the aggregate, reasonably be expected to have a Material Adverse Effect), and have paid all taxes due (except where the failure to pay would not individually or in the aggregate, reasonably be expected to have a Material Adverse Effect), and no tax deficiency has been determined adversely to the Company or any of its Subsidiaries, nor does the Company have any knowledge of any tax deficiencies that have been, or would reasonably be expected to be asserted against the Company, that would, in the aggregate, reasonably be expected to have a Material Adverse Effect.

(ad) Environmental Matters. Except as disclosed in the SEC Reports, the Company and each of its Subsidiaries (i) are, and at all times since January 1, 2015 were, in compliance with all laws, regulations, ordinances, rules, orders, judgments, decrees, permits or other legal requirements of any governmental authority, including without limitation any international, foreign, national, state, provincial, regional, or local authority, relating to pollution, the protection of human health or safety, the environment, or natural resources, or to use, handling, storage, manufacturing, transportation, treatment, discharge, disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "*Environmental Laws*") applicable to such entity, which compliance includes, without limitation, obtaining, maintaining and complying with all permits and authorizations and approvals required by Environmental Laws to conduct their respective businesses, and (ii) have not received written notice or otherwise have knowledge of any actual or alleged violation of Environmental Laws, or of any actual or potential liability for or other obligation concerning the presence, disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except in the case of clause (i) or (ii) where such non-compliance, violation, liability or other obligation would not, individually or in the aggregate, reasonably be expected to have a

Material Adverse Effect. Except as described in the SEC Reports, (x) there are no proceedings that are pending, or to the Company's knowledge, threatened, against the Company or any of its Subsidiaries under Environmental Laws in which a governmental authority is also a party, other than such proceedings regarding which it is reasonably believed no monetary sanctions of \$100,000 or more will be imposed, (y) the Company and its Subsidiaries are not aware of any issues regarding compliance with Environmental Laws, including any pending or proposed Environmental Laws, or liabilities or other obligations under Environmental Laws or concerning hazardous or toxic substances or wastes, pollutants or contaminants, that could reasonably be expected to have a material effect on the capital expenditures, earnings or competitive position of the Company and its Subsidiaries and (z) none of the Company and its Subsidiaries anticipates material capital expenditures relating to Environmental Laws.

(ae) No General Solicitation. The Company has not offered or sold any of the Securities by any form of general solicitation or general advertising.

(af) Foreign Corrupt Practices Act. Neither the Company nor any of its Subsidiaries, nor, to the knowledge of the Company, any director, officer, agent, employee or other person associated with or acting on behalf of the Company or any of its Subsidiaries, has: (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, the Organization for Economic Co-operation and Development Convention on Bribery of Foreign Public Officials in International Business Transactions, and the rules and regulations thereunder and any other similar foreign or domestic law or regulation; or (iv) made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment. The Company has instituted and maintains policies and procedures designed to ensure continued compliance with the laws and regulations referenced in clause (iii) of this paragraph.

(ag) Off Balance Sheet Arrangements. There are no transactions, arrangements or other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its Affiliates and any unconsolidated entity, including, but not limited to, any structural finance, special purpose or limited purpose entity (each, an "*Off-Balance Sheet Transaction*") that could reasonably be expected to materially affect the Company's liquidity or the availability of or requirements for its capital resources, including those Off-Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), and are required to be described in the SEC Reports, which have not been described as required.

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

(ai) Regulation M Compliance. The Company and its controlled affiliates have not taken, directly or indirectly, any action designed to or that has constituted or that could reasonably be expected to cause or result in the stabilization or manipulation of the price of any security of the Company in connection with the offering of the Securities.

(aj) PFIC. Subject to the qualifications and assumptions set forth in the SEC Reports, the Company is not, and upon the sale of the Shares and Prefunded Warrants contemplated hereby does not expect to become, a “passive foreign investment company” (as defined in Section 1297 of the Internal Code Revenue Code of 1986, as amended, and the regulations promulgated thereunder).

(ak) OFAC. Neither the Company nor any of its Subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or controlled affiliate of the Company or any of its Subsidiaries is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department (“OFAC”); and the Company will not directly or indirectly use the proceeds of the offering of the Shares, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

(al) Compliance with Healthcare Laws and Regulations. The Company and, to the knowledge of the Company, its directors, officers, employees, and agents (while acting in such capacity) are, and at all times prior to the date hereof have been, in compliance with, all health care laws and regulations applicable to the Company or any of its product candidates or activities, including development and testing of pharmaceutical products, kickbacks, recordkeeping, documentation requirements, the hiring of employees (to the extent governed by Health Care Laws, as defined below), quality, safety, privacy, security, licensure, accreditation or any other aspect of developing and testing health care or pharmaceutical products (collectively, “Health Care Laws”), except where such noncompliance would not, individually or in the aggregate, have a Material Adverse Effect. The Company has not received any notification, correspondence or any other written or oral communication, including notification of any pending or threatened claim, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any governmental authority, including, without limitation, the U.S. Food and Drug Administration (“FDA”), the U.S. Drug Enforcement Administration, the Centers for Medicare & Medicaid Services and the U.S. Department of Health and Human Services Office of Inspector General, of potential or actual non-compliance by, or liability of, the Company under any Health Care Laws. To the Company’s knowledge, there are no facts or circumstances that would reasonably be expected to give rise to liability of the Company under any Health Care Laws, except that would not individually or in the aggregate have a Material Adverse Effect.

(am) Shell Company. The Company is not an “ineligible issuer” (as defined in Rule 405 promulgated under the Securities Act).

(an) No Additional Agreements. The Company does not have any agreement or understanding with any Purchaser with respect to the transactions contemplated by the Transaction Documents other than as specified in the Transaction Documents or any written agreement regarding the confidentiality and use of confidential information.

(ao) Clinical Trials. The clinical and pre-clinical trials conducted by or on behalf of or sponsored by the Company, or in which the Company has participated, that are described in the SEC Reports or the results of which are referred to in the SEC Reports, were and, if still pending, are being conducted in accordance with standard medical and scientific research procedures and all applicable statutes, rules and regulations of the FDA and comparable drug regulatory agencies outside of the United States to which they are subject (collectively, the “Regulatory Authorities”), including, without limitation, 21 C.F.R. Parts 50, 54,

56, 58 and 312, and current Good Clinical Practices and Good Laboratory Practices; the descriptions in the SEC Reports of the results of such studies and trials are accurate and complete and fairly present the data derived from such trials; the Company has no knowledge of any other trials the results of which are inconsistent with or otherwise call into question the results described or referred to in the SEC Reports; the Company and its Subsidiaries have each operated and are currently in compliance with all applicable statutes, rules and regulations of the Regulatory Authorities, except where such noncompliance would not, individually or in the aggregate, have a Material Adverse Effect; and neither the Company, nor any of its Subsidiaries, has received any written notices, correspondence or other communication from the Regulatory Authorities or any governmental authority which threatens the termination or suspension of any clinical or pre-clinical trials that are described in the SEC Reports or the results of which are referred to in the SEC Reports, and there are no reasonable grounds for same.

(ap) Anti-Money Laundering Compliance. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any applicable related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “*Money Laundering Laws*”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(aq) Compliance with Applicable Laws and Regulations. Except as disclosed in the SEC Reports, the Company and its Subsidiaries: (i) are and at all times have been in compliance with all statutes, rules and regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, advertising, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured or distributed by the Company including, without limitation the Federal Food, Drug and Cosmetic Act (21 U.S.C. §301 et seq.), the Public Health Service Act (42 U.S.C. §201 et seq.), the federal Anti-Kickback Statute (42 U.S.C. §1320a-7b(b)), the civil False Claims Act (31 U.S.C. §3729 et seq.), the administrative False Claims Law (42 U.S.C. §1320a-7b(a)), the federal Physician Payment Sunshine Act (42 U.S.C. §1320a-7h), the Civil Monetary Penalties Law (42 U.S.C. §1320a-7a), the exclusion laws (42 U.S.C. §1320a-7), all criminal laws relating to health care fraud and abuse, including, but not limited to, 18 U.S.C. §286-287, the criminal health care fraud provisions of the Health Insurance Portability and Accountability Act of 1996 (18 U.S.C. §1035 and 1347) (“*HIPAA*”), Medicare (Title XVIII of the Social Security Act), Medicaid (Title XIX of the Social Security Act), HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, and the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Affordability Reconciliation Act of 2010, the regulations promulgated pursuant to such laws, and any successor government programs and comparable state laws, regulations relating to Good Clinical Practices and Good Laboratory Practices, collection and reporting requirements and the processing of any applicable rebate, chargeback or adjustment, under applicable rules and regulations relating to the Medicaid Drug Rebate Program (42 U.S.C. §1396r-8), any state supplemental rebate program, Medicare average sales price reporting (42 U.S.C. §1395w-3a), the Public Health Service Act (42 U.S.C. §256b), the VA Federal Supply Schedule (38 U.S.C. §8126) or under any state pharmaceutical assistance program or U.S. Department of Veterans Affairs agreement, and any successor government programs, and all other local, state, federal, national, supranational and foreign laws, manual provisions, policies and administrative guidance relating to the regulation of the Company (collectively, the “*Applicable Laws*”), except where such noncompliance would not, individually or in the aggregate, have a Material Adverse Effect; (ii) have not received any written notice from any court or arbitrator or governmental or regulatory authority or third party alleging or asserting noncompliance with any Applicable Laws or any Permits and supplements or amendments thereto required by any such Applicable

Laws (“*Authorizations*”); (iii) possess all Authorizations and such Authorizations are valid and in full force and effect and are not in violation of any term of any such Authorizations; (iv) have not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation arbitration or other action from any court or arbitrator or governmental or regulatory authority or third party alleging that any product operation or activity is in violation of any Applicable Laws or Authorizations nor is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened; (v) have not received any written or, to the Company’s knowledge, oral notice that any court or arbitrator or governmental or regulatory authority has taken, is taking or intends to take, action to limit, suspend, materially modify or revoke any Authorizations nor is any such limitation, suspension, modification or revocation threatened; (vi) have filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate in all material respects on the date filed (or were corrected or supplemented by a subsequent submission); and (vii) are not a party to and have no ongoing reporting obligations pursuant to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders or similar agreements with or imposed by any governmental or regulatory authority. Neither the Company, any of its Subsidiaries nor any of its or their respective officers, directors, employees or, to the Company’s knowledge of the Company, agents, has been excluded, suspended or debarred from or otherwise ineligible for participation in any U.S. federal health care program or human clinical research or, to the knowledge of the Company, is subject to a governmental inquiry, investigation, proceeding or other similar action that could reasonably be expected to result in debarment, suspension, ineligibility or exclusion.

(ar) Absence of Settlement Agreements or Undertakings. Except as disclosed in the SEC Reports, the Company is not a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental authority.

(as) Material Contracts. There are no contracts or other documents required to be described in the SEC Reports or filed as exhibits to the SEC Reports pursuant to Item 601 of Regulation S-K that are not described and filed as required. The statements made in the SEC Reports, insofar as they purport to constitute summaries of the terms of the contracts and other documents described and filed pursuant to Item 601 of Regulation S-K, constitute accurate summaries of the terms of such contracts and documents in all material respects. Except as disclosed in the SEC Reports, neither the Company nor any of its Subsidiaries has knowledge that any other party to any such contract or other document filed pursuant to Item 601 of Regulation S-K has any intention not to render full performance as contemplated by the terms thereof.

(at) Disclosure Controls. The Company and each of its Subsidiaries maintain disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) designed to ensure that the information required to be disclosed by the Company and its Subsidiaries in the reports they file or submit under the Exchange Act is accumulated and communicated to management of the Company and its Subsidiaries, including their respective principal executive officers and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure to be made, and such disclosure controls and procedures are effective in all material respects to perform the functions for which they were established.

(au) Defense Production Act of 1950. The Company does not engage in the design, fabrication, development, testing, production or manufacture of critical technologies within the meaning of the Defense Production Act of 1950, as amended, including all implementing regulations thereof and has no current intention of engaging in such activities in the future.

(av) No “Bad Actor” Disqualification. The Company has exercised reasonable care, in accordance with SEC rules and guidance, to determine whether any Covered Person (as defined below) is subject to any of the “bad actor” disqualifications described in Rule 506(d)(1)(i) through (viii) under the Securities Act (“*Disqualification Events*”). To the Company’s knowledge, no Covered Person is subject to a Disqualification Event, except for a Disqualification Event covered by Rule 506(d)(2) or (d)(3) under the Securities Act. The Company has complied, to the extent applicable, with any disclosure obligations under Rule 506(e) under the Securities Act. “*Covered Persons*” are those persons specified in Rule 506(d)(1) under the Securities Act, including the Company; any predecessor or affiliate of the Company; any director, executive officer, other officer participating in the offering, general partner or managing member of the Company; any beneficial owner of 20% or more of the Company’s outstanding voting equity securities, calculated on the basis of voting power; any promoter (as defined in Rule 405 under the Securities Act) connected with the Company in any capacity at the time of the sale of the Securities; and any person that has been or will be paid (directly or indirectly) remuneration for solicitation of purchasers in connection with the sale of the Securities (a “*Solicitor*”), any general partner or managing member of any Solicitor, and any director, executive officer or other officer participating in the offering of any Solicitor or general partner or managing member of any Solicitor.

3.2 Representations and Warranties of the Purchasers. Each Purchaser hereby, for itself and for no other Purchaser, represents and warrants as of the date hereof and as of the Closing Date to the Company as follows:

(a) Organization; Authority. Such Purchaser is an entity duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization with the requisite corporate, limited liability company or partnership power and authority to enter into and to consummate the transactions contemplated by the applicable Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement by such Purchaser and performance by such Purchaser of the transactions contemplated by this Agreement have been duly authorized by all necessary corporate or, if such Purchaser is not a corporation, such partnership, limited liability company or other applicable like action, on the part of such Purchaser. Each Transaction Document to which it is a party has been duly executed by such Purchaser, and when delivered by such Purchaser in accordance with the terms hereof, will constitute the valid and legally binding obligation of such Purchaser, enforceable against it in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally the enforcement of, creditors’ rights and remedies or by other equitable principles of general application.

(b) No Conflicts. The execution, delivery and performance by such Purchaser of this Agreement and the Registration Rights Agreement and the consummation by such Purchaser of the transactions contemplated hereby and thereby will not (i) result in a violation of the organizational documents of such Purchaser, (ii) conflict with, or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of, any agreement, indenture or instrument to which such Purchaser is a party, or (iii) result in a violation of any law, rule, regulation, order, judgment or decree (including federal and state securities laws) applicable to such Purchaser, except in the case of clauses (ii) and (iii) above, for such conflicts, defaults, rights or violations which would not, individually or in the aggregate, reasonably be expected to have a material adverse effect on the ability of such Purchaser to perform its obligations hereunder.

(c) Investment Intent. Such 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 Shares and Prefunded Warrants and, upon exercise of the Prefunded Warrants, will acquire the

Prefunded Warrant Shares issuable upon exercise thereof, 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 laws, *provided, however*, that by making the representations herein, such Purchaser does not agree to hold any of the Securities for any minimum period of time and reserves the right, subject to the provisions of this Agreement and the Registration Rights Agreement, at all times to sell or otherwise dispose of all or any part of such Securities pursuant to an effective registration statement under the Securities Act or under an exemption from such registration and in compliance with applicable federal and state securities laws. Such Purchaser is acquiring the Securities hereunder in the ordinary course of its business. Such Purchaser does not presently have any agreement, plan or understanding, directly or indirectly, with any Person to distribute or effect any distribution of any of the Securities (or any securities which are derivatives thereof) to or through any person or entity; such Purchaser is not a registered broker-dealer under Section 15 of the Exchange Act or an entity engaged in a business that would require it to be so registered as a broker-dealer.

(d) Purchaser Status. At the time such Purchaser was offered the Shares and Prefunded Warrants, it was, and at the date hereof it is, and on each date on which it exercises the Prefunded Warrants it will be, an “accredited investor” as defined in Rule 501(a) under the Securities Act.

(e) General Solicitation. Such Purchaser is not 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 any other general advertisement.

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

(g) Acknowledgment of Risks.

(i) Such Purchaser acknowledges and understands that its investment in the Securities involves a significant degree of risk, including, without limitation: (i) the Company remains a development stage business with limited operating history and requires substantial funds in addition to the proceeds from the sale of the Securities; (ii) an investment in the Company is speculative, and only Purchasers who can afford the loss of their entire investment should consider investing in the Company and the Securities; (iii) such Purchaser may not be able to liquidate its investment; (iv) transferability of the Securities is extremely limited; (v) in the event of a disposition of the Securities, such Purchaser could sustain the loss of its entire investment; and (vi) the Company has not paid any dividends on its Common Stock since inception and does not anticipate the payment of dividends in the foreseeable future. Such risks are more fully set forth in the public filings made by the Company with the Commission;

(ii) Such Purchaser is able to bear the economic risk of holding the Securities for an indefinite period, and has knowledge and experience in financial and business matters such that it is capable of evaluating the risks of the investment in the Securities; and

(iii) Such Purchaser has, in connection with such Purchaser’s decision to purchase Securities, not relied upon any representations or other information (whether oral or written) other than as set forth in the representations and warranties of the Company contained herein, and such Purchaser has, with respect to all matters relating to the Transaction Documents and the offer and sale of the Securities,

relied solely upon the advice of such Purchaser's own counsel and has not relied upon or consulted any counsel to the Company.

(h) Access to Information. Such Purchaser acknowledges that it has had the opportunity to review 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 the Subsidiaries and their respective 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. Neither such inquiries nor any other investigation conducted by or on behalf of such Purchaser or its representatives or counsel shall modify, amend or affect such Purchaser's right to rely on the truth, accuracy and completeness of the SEC Reports and the Company's representations and warranties contained in the Transaction Documents. Such Purchaser has sought such accounting, legal and tax advice as it has considered necessary to make an informed decision with respect to its acquisition of the Securities.

(i) Certain Trading Activities. Other than with respect to the transactions contemplated herein, since the time that such Purchaser was first contacted by the Company any other Person regarding the transactions contemplated hereby, neither the Purchaser nor any Affiliate of such Purchaser which (x) had knowledge of the transactions contemplated hereby, (y) has or shares discretion relating to such Purchaser's investments or trading or information concerning such Purchaser's investments, including in respect of the Securities, and (z) is subject to such Purchaser's review or input concerning such Affiliate's investments or trading (each a "*Trading Affiliate*") has directly or indirectly, nor has any Person acting on behalf of or pursuant to any understanding with such Purchaser or Trading Affiliate, effected or agreed to effect any purchases or sales of the securities of the Company (including, without limitation, any Short Sales involving the Company's securities). Notwithstanding the foregoing, in the case of a Purchaser and/or Trading Affiliate that is, individually or collectively, a multi-managed investment bank or vehicle whereby separate portfolio managers manage separate portions of such Purchaser's or Trading Affiliate's assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser's or Trading Affiliate's assets, the representation set forth above shall apply only with respect to the portion of assets managed by the portfolio manager that have knowledge about the financing transaction contemplated by this Agreement. Other than to other Persons party to this Agreement, such Purchaser has maintained the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction). Notwithstanding the foregoing, for avoidance of doubt, nothing contained herein shall constitute a representation or warranty, or preclude any actions, with respect to the identification of the availability of, or securing of, available shares to borrow in order to effect short sales or similar transactions in the future.

(j) Brokers and Finders. No Person will have, as a result of the transactions contemplated by this Agreement, any valid right, interest or claim against or upon the Company or any Purchaser for any commission, fee or other compensation pursuant to any agreement, arrangement or understanding entered into by or on behalf of the Purchaser.

(k) Independent Investment Decision. Such Purchaser has independently evaluated the merits of its decision to purchase Securities pursuant to the Transaction Documents, and such Purchaser confirms that it has not relied on the advice of any other Purchaser's business and/or legal counsel in making such decision. Such Purchaser understands that nothing in this Agreement or any other materials presented by or on behalf of the Company to the Purchaser in connection with the purchase of the Securities constitutes

legal, tax or investment advice. Such Purchaser has consulted such legal, tax and investment advisors as it, in its sole discretion, has deemed necessary or appropriate in connection with its purchase of the Securities.

(l) Reliance on Exemptions. Such Purchaser understands that the Securities being offered and sold to it in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and that the Company is relying in part upon the truth and accuracy of, and such Purchaser's compliance with, the representations, warranties, agreements, acknowledgements and understandings of such Purchaser set forth herein in order to determine the availability of such exemptions and the eligibility of such Purchaser to acquire the Securities.

(m) No Governmental Review. Such Purchaser understands that no United States federal or state agency or any other government or governmental agency has passed on or made any recommendation or endorsement of the Securities or the fairness or suitability of the investment in the Securities nor have such authorities passed upon or endorsed the merits of the offering of the Securities.

(n) Regulation M. Such Purchaser is aware that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of Common Stock and other activities with respect to the Common Stock by the Purchasers.

(o) Beneficial Ownership. Other than Purchasers with holdings of Company securities in excess of the Threshold Amount prior to any purchases pursuant to this Agreement ("*Existing Investors*"), the purchase by such Purchaser of the Shares and Prefunded Warrants issuable to it at the Closing will not (either with or without aggregating such Securities with the Prefunded Warrant Shares for which such Purchaser's Prefunded Warrants are exercisable) result in such Purchaser (individually or together with any other Person with whom such Purchaser has identified, or will have identified, itself as part of a "group" in a public filing made with the Commission involving the Company's securities) (when added to any other securities of the Company that it or they then own or have the right to acquire) acquiring, or obtaining the right to acquire, in excess of the Threshold Amount on a post transaction basis that assumes that such Closing shall have occurred. Other than Existing Investors, such Purchaser does not presently intend to, alone or together with others, make a public filing with the Commission to disclose that it has (or that it together with such other Persons have) acquired, or obtained the right to acquire, as a result of such Closing (when added to any other securities of the Company that it or they then own or have the right to acquire), in excess of the Threshold Amount on a post transaction basis that assumes that each Closing shall have occurred.

(p) Residency. Such Purchaser's residence (if an individual) or offices in which its investment decision with respect to the Securities was made (if an entity) are located at the address immediately below such Purchaser's name on its signature page hereto.

(q) Anti-Money Laundering Laws. Such Purchaser represents and warrants to, and covenants with, the Company that: (i) such Purchaser is in compliance with the regulations administered by the U.S. Department of the Treasury ("*Treasury*") Office of Foreign Assets Control; (ii) such Purchaser, its parents, subsidiaries, affiliated companies, officers, directors and partners, and to such Purchaser's knowledge, its stockholders, owners, employees, and agents, are not on the List of Specially Designated Nationals and Blocked Persons maintained by Treasury and have not been designated by Treasury as a financial institution of primary money laundering concern subject to special measures under Section 311 of the USA PATRIOT Act, Pub. L. 107-56; (iii) to such Purchaser's knowledge, the funds to be used to acquire the Securities are not derived from activities that contravene applicable anti-money laundering laws and regulations; (iv) such Purchaser is in compliance with all other applicable anti money laundering laws and regulations and has implemented anti money laundering procedures that comply with applicable anti-money

laundering laws and regulations, including, as applicable, the requirements of the Bank Secrecy Act, as amended by the USA PATRIOT Act, Pub. L. 107 56; and (v) to the best of its knowledge (A) none of the funds to be provided by such Purchaser are being tendered on behalf of a person or entity who has not been identified to such Purchaser, and (B) upon the reasonable request of the Company, such Purchaser agrees to re-certify in writing the representations, warranties and covenants provided in this paragraph.

(r) No “Bad Actor” Disqualification Events. Neither (i) the Purchaser, (ii) any of its directors, executive officers, other officers that may serve as a director or officer of any company in which it invests, general partners or managing members, nor (iii) any beneficial owner of the Company’s voting equity securities (in accordance with Rule 506(d) of the Securities Act) held by the Purchaser is subject to any Disqualification Event, except for Disqualification Events covered by Rule 506(d)(2)(ii) or (iii) or (d)(3) under the Securities Act and disclosed reasonably in advance of the Closing in writing in reasonable detail to the Company.

(s) Representations by Non-United States Persons. If Purchaser is not a United States person, the Purchaser hereby represents that the Purchaser has satisfied the laws of the Purchaser’s jurisdiction in connection with any invitation to subscribe for the Securities or any use of the Transaction Documents, including (i) the legal requirements within the Purchaser’s jurisdiction for the purchase of the Securities, (ii) any foreign exchange restrictions applicable to such purchase, (iii) any governmental or other consents that may need to be obtained and (iv) the income tax and other tax consequences, if any, that may be relevant to the purchase, holding, redemption, sale or transfer of the Securities. The Purchaser’s subscription and payment for, and the Purchaser’s continued beneficial ownership of, the Securities will not violate any applicable securities or other laws of the Purchaser’s jurisdiction.

The Company and each of the Purchasers acknowledge and agree that no party to this Agreement has made or makes any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in this Article III and the Transaction Documents.

ARTICLE IV. OTHER AGREEMENTS OF THE PARTIES

4.1 Transfer Restrictions.

(a) Compliance with Laws. Notwithstanding any other provision of this Article IV, each Purchaser covenants that the Securities may be disposed of only pursuant to an effective registration statement under, and in compliance with the requirements of, 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 compliance with any applicable state and federal securities laws. In connection with any transfer of the Securities other than (i) pursuant to an effective registration statement, (ii) to the Company, (iii) pursuant to Rule 144 (*provided* that the Purchaser provides the Company with reasonable assurances (in the form of seller and, if applicable, broker representation letters) that the securities may be sold pursuant to such rule) or (iv) in connection with a bona fide 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 or applicable state securities law. 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 a Purchaser under this Agreement and the Registration Rights Agreement with respect to such transferred Securities.

(b) Legends. Any certificates or book-entry notations shall bear any legend as required by the “blue sky” laws of any state and a restrictive legend in substantially the following form, until such time as they are not required under Section 4.1(c):

THE OFFER AND SALE OF THESE SECURITIES AND THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), OR ANY APPLICABLE STATE SECURITIES LAWS. THE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED, ASSIGNED OR OTHERWISE DISPOSED OF (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN EACH CASE IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY AND ITS TRANSFER AGENT OR (II) UNLESS SOLD PURSUANT TO RULE 144 UNDER THE SECURITIES ACT. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES; PROVIDED THAT IN CONNECTION WITH ANY FORECLOSURE OR TRANSFER OF THE SECURITIES, THE TRANSFEROR SHALL COMPLY WITH THE PROVISIONS HEREIN, IN THE SECURITIES PURCHASE AGREEMENT AND THE REGISTRATION RIGHTS AGREEMENT, AND UPON FORECLOSURE OR TRANSFER OF THE SECURITIES, SUCH FORECLOSING PERSON OR TRANSFEREE SHALL COMPLY WITH ALL PROVISIONS CONTAINED HEREIN, IN THE SECURITIES PURCHASE AGREEMENT AND THE REGISTRATION RIGHTS AGREEMENT.

The Company acknowledges and agrees that a Purchaser may from time to time pledge, and/or grant a security interest in, some or all of the legended Securities in connection with applicable securities laws, pursuant to a bona fide margin agreement in compliance with a bona fide margin loan. Such a pledge would not be subject to approval or consent of the Company and no legal opinion of legal counsel to the pledgee, secured party or pledgor shall be required in connection with the pledge, but such legal opinion shall be required in connection with a subsequent transfer or foreclosure following default by the Purchaser transferee of the pledge. No notice shall be required of such pledge, but Purchaser shall promptly notify the Company of any such subsequent transfer or foreclosure. Each Purchaser acknowledges that the Company shall not be responsible for any pledges relating to, or the grant of any security interest in, any of the Securities or for any agreement, understanding or arrangement between any Purchaser and its pledgee or secured party. At the appropriate Purchaser’s expense, the Company will execute and deliver such reasonable documentation as such Purchaser may reasonably request in connection with a pledge or transfer of the Securities, including the preparation and filing of any required prospectus supplement under Rule 424(b)(3) of the Securities Act or other applicable provision of the Securities Act to appropriately amend the list of selling stockholders thereunder. Each Purchaser acknowledges and agrees that, except as otherwise provided in Section 4.1(c), any Securities subject to a pledge or security interest as contemplated by this Section 4.1(b) shall continue to bear the legend set forth in this Section 4.1(b) and be subject to the restrictions on transfer set forth in Section 4.1(a).

(c) Removal of Legends. The legend set forth in Section 4.1(b) above shall be removed and the Company shall issue a book-entry notation (or certificate, as applicable) to such holder or issue to such holder by electronic delivery at the applicable balance account at the Depository Trust Company (“DTC”), if (i) such Securities are registered for resale under the Securities Act (*provided* that, if the Purchaser is selling pursuant to the effective registration statement registering the Securities for resale, the Purchaser agrees to only sell such Securities during such time that such registration statement is effective and not withdrawn or suspended, and only as permitted by such registration statement), (ii) such Securities are sold or transferred pursuant to Rule 144 (if the transferor is not an Affiliate of the Company and assuming cashless exercise of the Warrants), or (iii) such Securities are eligible for sale under Rule 144, without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such Securities and without volume or manner-of-sale restrictions. Following the earlier of (i) the Effective Date and (ii) Rule 144 becoming available for the resale of Securities, without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such Securities and without volume or manner-of-sale restrictions, and assuming cashless exercise of the Warrants, the Company shall cause Company Counsel to issue to the Transfer Agent the legal opinion referred to in the Irrevocable Transfer Agent Instructions. Any fees (with respect to the Transfer Agent, Company Counsel or otherwise) associated with the issuance of such opinion or the removal of such legend shall be borne by the Company. Following the Effective Date, or at such earlier time as a legend is no longer required for certain Securities, the Company will promptly following the delivery by a Purchaser to the Company (with written notice to the Company) of (i) a legended certificate or book-entry notation representing Shares and Prefunded Warrant Shares (endorsed or with stock powers attached, signatures guaranteed, and otherwise in the form necessary to affect the reissuance and/or transfer) and an opinion of counsel to the extent required by Section 4.1(a) or (ii) an Exercise Notice (as defined in the Prefunded Warrants) in the manner stated in the Prefunded Warrants to effect the exercise of such Prefunded Warrant in accordance with its terms, and an opinion of counsel to the extent required by Section 4.1(a) (such date, the “*Legend Removal Date*”), deliver or cause to be delivered to such Purchaser a certificate or book-entry notation 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 4.1(c). Certificates or book-entry notations subject to legend removal hereunder may be transmitted by the Transfer Agent to the Purchasers by crediting the account of the Purchaser’s prime broker with DTC as directed by such Purchaser.

(d) Irrevocable Transfer Agent Instructions. The Company shall issue irrevocable instructions to its transfer agent, and any subsequent transfer agent, in the form of Exhibit E, as applicable, attached hereto (the “*Irrevocable Transfer Agent Instructions*”). The Company represents and warrants that no instruction other than the Irrevocable Transfer Agent Instructions referred to in this Section 4.1(d) (or instructions that are consistent therewith) will be given by the Company to the Transfer Agent in connection with this Agreement (other than those instructions contemplated in Section 2.2(a)(vi)), and that the Securities shall otherwise be freely transferable on the books and records of the Company as and to the extent provided in this Agreement and the other Transaction Documents and applicable law. The Company acknowledges that a breach by it of its obligations under this Section 4.1(d), will cause irreparable harm to a Purchaser. Accordingly, the Company acknowledges that the remedy at law for a breach of its obligations under this Section 4.1(d) will be inadequate and agrees, in the event of a breach by the Company of the provisions of this Section 4.1(d), that a Purchaser shall be entitled, in addition to all other available remedies, to an order and/or injunction restraining any breach and requiring immediate issuance and transfer, without the necessity of showing economic loss and without any bond or other security being required.

(e) Acknowledgement. Each Purchaser hereunder acknowledges its primary responsibilities under the Securities Act and accordingly will not sell or otherwise transfer the Securities or any interest therein without complying with the requirements of the Securities Act. While the Registration

Statement remains effective, each Purchaser hereunder may sell the Shares and the Prefunded Warrant Shares in accordance with the plan of distribution contained in the Registration Statement and if it does so it will comply therewith and with the related prospectus delivery requirements unless an exemption therefrom is available. Each Purchaser, severally and not jointly with the other Purchasers, agrees that if it is notified by the Company in writing at any time that the Registration Statement registering the resale of the Shares and the Prefunded Warrant Shares is not effective or that the prospectus included in such Registration Statement no longer complies with the requirements of Section 10 of the Securities Act, the Purchaser will refrain from selling such Shares and Prefunded Warrant Shares until such time as the Purchaser is notified by the Company that such Registration Statement is effective or such prospectus is compliant with Section 10 of the Securities Act, unless such Purchaser is able to, and does, sell such Shares and Prefunded Warrant Shares pursuant to an available exemption from the registration requirements of Section 5 of the Securities Act. Both the Company and its Transfer Agent, and their respective directors, officers, employees and agents, may rely on this Section 4.1(e) and each Purchaser hereunder will indemnify and hold harmless each of such persons from any breaches or violations of this Section 4.1(e).

4.2 Reservation of Common Stock. The Company shall take all action necessary to at all times have authorized, and reserved for the purpose of issuance from and after the Closing Date, the number of shares of Common Stock issuable upon exercise of the Prefunded Warrants issued at the Closing (without taking into account any limitations on exercise of the Prefunded Warrants set forth in the Prefunded Warrants).

4.3 Furnishing of Information. In order to enable the Purchasers to sell the Securities under Rule 144, for a period of twelve (12) months from the Closing, the Company shall use its commercially reasonable efforts to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to the Exchange Act. During such twelve (12) month period, if the Company is not required to file reports pursuant to the Exchange Act, it will prepare and furnish to the Purchasers and make publicly available in accordance with Rule 144(c) such information as is required for the Purchasers to sell the Securities under Rule 144.

4.4 Integration. The Company shall not, and shall use its commercially reasonable efforts to ensure that no Affiliate of the Company shall, 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 will 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 to the Purchasers, or that will 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.

4.5 Securities Laws Disclosure; Publicity. By 9:00 A.M., New York City time, on the Trading Day immediately following the date hereof, the Company shall issue a press release (the “*Press Release*”) disclosing all material terms of the transactions contemplated hereby. On or before 9:00 A.M., New York City time, on the second (2nd) Trading Day immediately following the date hereof, the Company will file a Current Report on Form 8-K with the Commission describing the terms of the Transaction Documents (and including as exhibits to such Current Report on Form 8-K the material Transaction Documents (including, without limitation, this Agreement, the form of Prefunded Warrant, the Registration Rights Agreement and the Exchange Agreement)). Notwithstanding the foregoing, the Company shall not publicly disclose the name of any Purchaser or an Affiliate of any Purchaser, or include the name of any Purchaser or an Affiliate of any Purchaser in any press release or filing with the Commission (other than the Registration Statement) or any regulatory agency or Trading Market, without the prior written consent of such Purchaser, except (i) as required by federal securities law in connection with (A) any registration statement contemplated by the

Registration Rights Agreement and (B) the filing of final Transaction Documents (including signature pages thereto) with the Commission and (ii) to the extent such disclosure is required by law, request of the Staff of the Commission or Trading Market regulations, in which case the Company shall provide the Purchasers with prior notice of such disclosure permitted under this subclause (ii). From and after the issuance of the Press Release, no Purchaser shall be in possession of any material, non-public information regarding the Company or its Subsidiaries received from the Company, any Subsidiary or any of their respective officers, directors, employees or agents, that is not disclosed in the Press Release unless a Purchaser shall have executed a written agreement regarding the confidentiality and use of such information. Each Purchaser, severally and not jointly with the other Purchasers, covenants that until such time as the transactions contemplated by this Agreement are required to be publicly disclosed by the Company as described in this Section 4.5, such Purchaser will maintain the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction).

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

4.7 Non-Public Information. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, including this Agreement, or as expressly required by any applicable securities law, the Company covenants and agrees that neither it, nor any other Person acting on its behalf, will provide any Purchaser or its agents or counsel with any information regarding the Company that the Company believes constitutes material non-public information regarding the Company or its Subsidiaries without the express written consent of such Purchaser, unless prior thereto such Purchaser shall have executed a written agreement regarding the confidentiality and use of such information. The Company understands and confirms that each Purchaser shall be relying on the foregoing covenant in effecting transactions in securities of the Company.

4.8 Use of Proceeds. The Company shall use the net proceeds from the sale of the Shares and the Prefunded Warrants hereunder for working capital and general corporate purposes and shall not use such proceeds for the redemption of any Common Stock or Common Stock Equivalents.

4.9 Indemnification of Purchasers. Subject to the provisions of this Section 4.9, the Company will indemnify and hold each Purchaser and its directors, officers, stockholders, members, partners, employees and agents (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title), each Person who controls such Purchaser (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, stockholders, agents, members, partners or employees (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title) of such controlling persons (each, a “*Purchaser Party*”) harmless from any and all losses, liabilities, obligations, claims, contingencies, damages, costs and expenses, including all judgments, amounts paid in settlements, court costs and reasonable attorneys’ fees and costs of investigation that any such Purchaser Party may suffer or incur as a result of or relating to (a) any breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents or (b) any action instituted against a Purchaser in any capacity, or any of them or their respective Affiliates, by any stockholder of the Company who is not an Affiliate of such Purchaser, with respect to any of the transactions

contemplated by the Transaction Documents (unless such action is based upon a breach of such Purchaser's representations, warranties or covenants under the Transaction Documents or any agreements or understandings such Purchaser may have with any such stockholder or any violations by the Purchaser of state or federal securities laws or any conduct by such Purchaser which constitutes fraud, gross negligence, willful misconduct, bad faith or malfeasance). Promptly after receipt by any Purchaser Party (the "*Indemnified Person*") of notice of any demand, claim or circumstances which could reasonably be expected to give rise to a claim or the commencement of any action, proceeding or investigation in respect of which indemnity may be sought pursuant to this Section 4.9, such Indemnified Person shall promptly notify the Company in writing and the Company shall assume the defense thereof, including the employment of counsel reasonably satisfactory to such Indemnified Person, and shall assume the payment of all fees and expenses; *provided, however*, that the failure of any Indemnified Person so to notify the Company shall not relieve the Company of its obligations hereunder except to the extent that the Company is actually and materially prejudiced by such failure to notify. In any such proceeding, any Indemnified Person shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such Indemnified Person unless: (i) the Company and the Indemnified Person shall have mutually agreed to the retention of such counsel; (ii) the Company shall have failed promptly to assume the defense of such proceeding and to employ counsel reasonably satisfactory to such Indemnified Person in such proceeding; or (iii) in the reasonable judgment of counsel to such Indemnified Person, representation of both parties by the same counsel would be inappropriate due to actual or potential differing interests between them; *provided, however*, that the Company shall not be responsible for the fees and expenses of more than one counsel for all Indemnified Persons. The Company shall not be liable for any settlement of any action, claim or proceeding effected without its prior written consent, which consent shall not be unreasonably withheld, delayed or conditioned. Without the prior written consent of the Indemnified Person, which consent shall not be unreasonably withheld, delayed or conditioned, the Company shall not effect any settlement of any pending or threatened proceeding in respect of which any Indemnified Person is or could have been a party and indemnity could have been sought hereunder by such Indemnified Party, unless such settlement includes an unconditional release of such Indemnified Person from all liability arising out of such proceeding.

4.10 Principal Trading Market Listing. In the time and manner required by the Principal Trading Market, the Company shall prepare and file with such Principal Trading Market an additional shares listing application covering all of the Shares and the Prefunded Warrant Shares and shall use its commercially reasonable efforts to take all steps necessary to cause all of the Shares and the Prefunded Warrant Shares to be approved for listing on the Principal Trading Market as promptly as possible thereafter.

4.11 Form D; Blue Sky. The Company agrees to timely file a Form D with respect to the Securities as required under Regulation D. The Company, on or before the Closing Date, shall take such action as the Company shall reasonably determine is necessary in order to obtain an exemption from or to qualify the Securities for sale to the Purchasers under applicable securities or "Blue Sky" laws of the states of the United States (or to obtain an exemption from such qualification).

4.12 Delivery of Shares and Prefunded Warrants After Closing. Subject to the satisfaction of each Purchaser's obligations under the Transaction Documents, the Company shall deliver, or cause to be delivered, a book-entry statement evidencing the Shares within one (1) Trading Day after the Closing and physical Prefunded Warrants purchased by each Prefunded Warrant Purchaser to such Prefunded Warrant Purchaser within three (3) Trading Days of the Closing Date.

4.13 Short Sales and Confidentiality After the Date Hereof. Such Purchaser shall not, and shall cause its Trading Affiliates not to, engage, directly or indirectly, in any transactions in the Company's securities (including, without limitation, any Short Sales involving the Company's securities) during the period from the date hereof until the earlier of such time as (i) the transactions contemplated by this

Agreement are first publicly announced as required by and described in Section 4.5 and (ii) this Agreement is terminated in full pursuant to Section 6.18. Each Purchaser, severally and not jointly with the other Purchasers, covenants that until such time as the transactions contemplated by this Agreement are publicly disclosed by the Company as described in Section 4.5, such Purchaser will maintain the confidentiality of the existence and terms of this transaction and the information included in the Transaction Documents. Notwithstanding the foregoing, no Purchaser makes any representation, warranty or covenant hereby that it will not engage in Short Sales in the securities of the Company after the time that the transactions contemplated by this Agreement are first publicly announced as described in Section 4.5; *provided, however*, each Purchaser agrees, severally and not jointly with any Purchasers, that they will not enter into any Net Short Sales (as hereinafter defined) from the period commencing on the Closing Date and ending on the earliest of (x) the Effective Date of the initial Registration Statement, (y) the twenty-four (24) month anniversary of the Closing Date and (z) the date that such Purchaser no longer holds any Securities. For purposes of this Section 4.13, a “*Net Short Sale*” by any Purchaser shall mean a sale of Common Stock by such Purchaser that is marked as a short sale and that is made at a time when there is no equivalent offsetting long position in Common Stock held by such Purchaser. For purposes of determining whether there is an equivalent offsetting position in Common Stock held by the Purchaser, Prefunded Warrant Shares that have not yet been issued pursuant to the exercise of Prefunded Warrants shall be deemed to be held long by the Purchaser, and the amount of shares of Common Stock held in a long position shall be all Shares and unexercised Prefunded Warrant Shares (ignoring any exercise limitations included therein) issuable to such Purchaser on such date, plus any shares of Common Stock or Common Stock Equivalents otherwise then held by such Purchaser. Notwithstanding the foregoing, in the event that a Purchaser is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Purchaser’s assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Purchaser’s assets, the representation set forth above shall apply only with respect to the portion of assets managed by the portfolio manager that have knowledge about the financing transaction contemplated by this Agreement. Moreover, notwithstanding the foregoing, in the event that a Purchaser has sold Securities pursuant to Rule 144 prior to the Effective Date of the initial Registration Statement and the Company has failed to issue Securities without legends prior to the settlement date for such sale (assuming that such Securities meet the requirements set forth in Section 4.1(c) for the removal of legends), the provisions of this Section 4.13 shall not prohibit the Purchaser from entering into Net Short Sales for the purpose of delivering shares of Common Stock in settlement of such sale. Each Purchaser understands and acknowledges, severally and not jointly with any other Purchaser, that the Commission currently takes the position that covering a short position established prior to effectiveness of a resale registration statement with shares included in such registration statement would be a violation of Section 5 of the Securities Act, as set forth in Item 65, Section 5 under Section A, of the Manual of Publicly Available Telephone Interpretations, dated July 1997, compiled by the Office of Chief Counsel, Division of Corporation Finance.

4.14 Subsequent Equity Sales. From the date hereof until ninety (90) days following the Closing Date (the “*Restricted Period*”), neither the Company nor any Subsidiary shall issue shares of Common Stock or Common Stock Equivalents. Notwithstanding anything to the contrary contained herein, the foregoing restrictions shall not apply to (a) the Securities to be sold pursuant to the Agreement, (b) the issuance by the Company of shares of Common Stock upon the exercise (including any net exercise) of an option or warrant or the conversion of a security outstanding on the date hereof or pursuant to contractual obligations of the Company in effect as of the date hereof, including without limitation restricted stock units, (c) the issuance by the Company of options, restricted stock units or restricted stock awards (including the Common Stock issued upon the settlement or exercise thereof) to employees, officers, directors, advisors or consultants of the Company pursuant to employee benefit plans (including equity incentive plans) described in the SEC Reports or pursuant to bona fide employee benefit or purchase plans established during the Restricted Period

(including any inducement equity plans or awards established in compliance with the Nasdaq Marketplace Rules), (d) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of Common Stock, *provided* that (1) such plan does not provide for the transfer of Common Stock during the Restricted Period and (2) no public announcement or filing under the Exchange Act is required of or voluntarily made by the Company regarding the establishment of such plan, (e) the issuance by the Company of shares of Common Stock or securities convertible into, exchangeable for or that represent the right to receive Common Stock in connection with (1) the acquisition by the Company or any of its subsidiaries of the securities, business, technology, property or other assets of another person or entity or pursuant to an employee benefit plan assumed by the Company in connection with such acquisition, or (2) the Company's joint ventures, equipment leasing arrangements, licensing transactions, collaborations, debt financings and other strategic transactions, *provided* that the aggregate number of shares of Common Stock that the Company may sell or issue or agree to sell or issue pursuant to clause (e) shall not exceed 5% of the total number of shares of Common Stock outstanding immediately following the completion of the transactions contemplated by this Agreement, or (f) the sale and issuance by the Company of shares of Common Stock under any "at the market offering," as defined in Rule 415 promulgated under the Securities Act.

ARTICLE V.
CONDITIONS PRECEDENT TO CLOSING

5.1 Conditions Precedent to the Obligations of the Purchasers to Purchase Securities. The obligation of each Purchaser to acquire Shares and Prefunded Warrants (if applicable) at the Closing is subject to the fulfillment to such Purchaser's satisfaction, on or prior to the Closing Date, of each of the following conditions, any of which may be waived by such Purchaser (as to itself only):

(a) Representations and Warranties. The representations and warranties of the Company contained herein shall be true and correct in all material respects (except for those representations and warranties which are qualified as to materiality or Material Adverse Effect, in which case such representations and warranties shall be true and correct in all respects) as of the date hereof and as of the Closing Date, as though made on and as of such date, except for such representations and warranties that speak as of a specific date.

(b) Performance. The Company shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by it at or prior to the Closing.

(c) No Injunction. No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction that prohibits the consummation of any of the transactions contemplated by the Transaction Documents.

(d) Consents. The Company shall have obtained in a timely fashion any and all consents, permits, approvals, registrations and waivers necessary for consummation of the purchase and sale of the Securities (including all Required Approvals), all of which shall be and remain so long as necessary in full force and effect.

(e) Adverse Changes. Since the date hereof, no event or series of events shall have occurred that has had or would reasonably be expected to have a Material Adverse Effect.

(f) Listing. The Nasdaq Global Market shall have approved the listing of additional shares application for the Shares and the Prefunded Warrant Shares.

(g) No Suspensions of Trading in Common Stock. The Common Stock shall not have been suspended, as of the Closing Date, by the Commission or the Principal Trading Market from trading on the Principal Trading Market nor shall suspension by the Commission or the Principal Trading Market have been threatened, as of the Closing Date, either (A) in writing by the Commission or the Principal Trading Market or (B) by falling below the minimum listing maintenance requirements of the Principal Trading Market.

(h) Company Deliverables. The Company shall have delivered the Company Deliverables in accordance with Section 2.2(a).

(i) Compliance Certificate. The Company shall have delivered to each Purchaser a certificate, dated as of the Closing Date and signed by its Chief Executive Officer or its Chief Financial Officer, dated as of the Closing Date, certifying to the fulfillment of the conditions specified in Sections 5.1(a) and (b) in the form attached hereto as Exhibit G.

(j) Termination. This Agreement shall not have been terminated as to such Purchaser in accordance with Section 6.18 herein.

5.2 Conditions Precedent to the Obligations of the Company to sell Securities. The Company's obligation to sell and issue the Shares and the Prefunded Warrants (if applicable) at the Closing to the Purchasers is subject to the fulfillment to the satisfaction of the Company on or prior to the Closing Date of the following conditions, any of which may be waived by the Company:

(a) Representations and Warranties. The representations and warranties made by the Purchasers contained herein shall be true and correct in all material respects (except for those representations and warranties which are qualified as to materiality, in which case such representations and warranties shall be true and correct in all respects) as of the date hereof, and as of the Closing Date as though made on and as of such date, except for representations and warranties that speak as of a specific date.

(b) Performance. Such Purchaser shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by such Purchaser at or prior to the Closing Date.

(c) No Injunction. No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction that prohibits the consummation of any of the transactions contemplated by the Transaction Documents.

(d) Consents. The Company shall have obtained in a timely fashion any and all consents, permits, approvals, registrations and waivers necessary for consummation of the purchase and sale of the Securities (including all Required Approvals), all of which shall be and remain so long as necessary in full force and effect.

(e) Purchasers Deliverables. Such Purchaser shall have delivered its Purchaser Deliverables in accordance with Section 2.2(b).

(f) Listing. The Nasdaq Global Market shall have approved the listing of additional shares application for the Shares and the Prefunded Warrant Shares.

(g) Termination. This Agreement shall not have been terminated as to such Purchaser in accordance with Section 6.18 herein.

ARTICLE VI. MISCELLANEOUS

6.1 Fees and Expenses. The Company and the Purchasers shall each pay the fees and expenses of their respective advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party in connection with the negotiation, preparation, execution, delivery and performance of this Agreement. The Company shall pay all Transfer Agent fees, stamp taxes and other taxes and duties levied in connection with the sale and issuance of the Securities to the Purchasers; *provided*, that pursuant to Section 6 of the Prefunded Warrants, the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of Prefunded Warrant Shares or Prefunded Warrants in a name other than that of the Purchaser or an Affiliate thereof. Notwithstanding the foregoing, the Company shall reimburse Frazier Life Sciences Public Fund, L.P. (a Purchaser) up to \$25,000 in the aggregate for its documented and reasonable consulting, legal and other out of pocket expenses related to the transactions contemplated by the Transaction Documents, which amount may be withheld by such Purchaser from its aggregate Prefunded Warrant Subscription Amount at the Closing.

6.2 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 supersede all prior agreements, understandings, discussions and representations, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules. At or after the Closing, and without further consideration, the Company and the Purchasers will execute and deliver to the other such further documents as may be reasonably requested in order to give practical effect to the intention of the parties under the Transaction Documents.

6.3 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 date of transmission, if such notice or communication is delivered via facsimile (*provided* the sender receives a machine-generated confirmation of successful transmission) at the facsimile number specified in this Section 6.3 prior to 5:00 P.M., New York City time, on a Trading Day, (b) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number specified in this Section 6.3 on a day that is not a Trading Day or later than 5:00 P.M., New York City time, on any Trading Day, (c) the Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service with next day delivery specified, and (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 follows:

If to the Company: Alpine Immune Sciences, Inc.
188 East Blaine Street, Suite 200
Seattle, WA 98102
Telephone No.: (206) 788-4545
Facsimile No.: (206) 316-8383 (with a copy emailed to legal@alpineimmunesciences.com, which shall not constitute notice)
Attention: Chief Financial Officer

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

Wilson Sonsini Goodrich & Rosati, Professional Corporation
701 Fifth Avenue, Suite 5100
Seattle, WA 98104
Telephone No.: (206) 883-2500
Facsimile No.: (206) 883-2699
Attention: Patrick Schultheis, Michael Nordtvedt and Bryan King

If to a Purchaser: To the address set forth under such Purchaser's name on the signature page hereof;

or such other address as may be designated in writing hereafter, in the same manner, by such Person.

6.4 Amendments; Waivers; No Additional Consideration. 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 Purchasers of at least a majority in interest of the Securities then held by Purchasers, or, in the case of a waiver, by the party against whom enforcement of any such waiver is sought. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of either party to exercise any right hereunder in any manner impair the exercise of any such right. No consideration shall be offered or paid to any Purchaser to amend or consent to a waiver or modification of any provision of any Transaction Document unless the same consideration is also offered to all Purchasers who then hold Securities.

6.5 Construction. 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. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party. This Agreement shall be construed as if drafted jointly by the parties, and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any provisions of this Agreement or any of the Transaction Documents.

6.6 Successors and Assigns. The provisions of this Agreement shall inure to the benefit of and be binding upon the parties and their successors and permitted assigns. Except in the case of a Fundamental Transaction as contemplated in the Prefunded Warrants, this Agreement, or any rights or obligations hereunder, may not be assigned by the Company without the prior written consent of each Purchaser. Any Purchaser may assign its rights hereunder in whole or in part to any Person to whom such Purchaser assigns or transfers any Securities in compliance with the Transaction Documents and applicable law, *provided* such transferee shall agree in writing to be bound, with respect to the transferred Securities, by the terms and conditions of this the Transaction Documents that apply to the "Purchasers".

6.7 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 each Purchaser Party is an intended third party beneficiary of Section 4.9.

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

party agrees that all 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, employees or agents) shall be commenced exclusively in the New York Courts. Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts 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 Proceeding, any claim that it is not personally subject to the jurisdiction of any such New York Court, or that such Proceeding has been commenced in an improper or inconvenient forum. Each party hereto hereby irrevocably waives personal service of process and consents to process being served in any such 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 manner permitted by law. **EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.**

6.9 Survival. Subject to applicable statute of limitations, the representations, warranties, agreements and covenants contained herein shall survive the Closing and the delivery of the Securities.

6.10 Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to 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 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 signature page were an original thereof.

6.11 Severability. If any provision of this Agreement is held to be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Agreement shall not in any way be affected or impaired thereby and the parties will attempt to agree upon a valid and enforceable provision that is a reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Agreement.

6.12 Rescission and Withdrawal Right. Notwithstanding anything to the contrary contained in (and without limiting any similar provisions of) the Transaction Documents, whenever any Purchaser exercises a right, election, demand or option under a Transaction Document and the Company does not timely perform its related obligations within the periods therein provided, then such Purchaser may rescind or withdraw, in its sole discretion from time to time upon written notice to the Company, any relevant notice, demand or election in whole or in part without prejudice to its future actions and rights, unless such rescission or withdrawal would materially prejudice the Company.

6.13 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, or in lieu of and substitution therefor, a new certificate or instrument, but only upon receipt of evidence reasonably satisfactory to the Company and the Transfer Agent of such loss, theft or destruction and the execution by the holder thereof of a customary lost certificate affidavit of that fact and an agreement to indemnify and hold harmless the Company and the Transfer Agent for any losses in connection therewith or, if required by the Transfer Agent, a bond in such form and amount

as is required by the Transfer Agent. The applicants for a new certificate or instrument under such circumstances shall also pay any reasonable third-party costs associated with the issuance of such replacement Securities. If a replacement certificate or instrument evidencing any Securities is requested due to a mutilation thereof, the Company may require delivery of such mutilated certificate or instrument as a condition precedent to any issuance of a replacement.

6.14 Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, each of the Purchasers and the Company will be entitled to specific performance under the Transaction Documents. Except as expressly set forth in 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 described in the foregoing sentence and hereby agree to waive in any action for specific performance of any such obligation (other than in connection with any action for a temporary restraining order) the defense that a remedy at law would be adequate.

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

6.16 Adjustments in Share Numbers and Prices. In the event of any stock split, subdivision, dividend or distribution to all stockholders of the Company payable in shares of Common Stock (or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly shares of Common Stock), combination or other similar recapitalization or event occurring after the date hereof and prior to the Closing, each reference in any Transaction Document to a number of shares or a price per share shall be deemed to be amended to appropriately account for such event.

6.17 Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under any Transaction Document are several and not joint with the obligations of any other Purchaser, and no Purchaser shall be responsible in any way for the performance of the obligations of any other Purchaser under any Transaction Document. The decision of each Purchaser to purchase Securities pursuant to the Transaction Documents has been made by such Purchaser independently of any other Purchaser and independently of any information, materials, statements or opinions as to the business, affairs, operations, assets, properties, liabilities, results of operations, condition (financial or otherwise) or prospects of the Company or any Subsidiary which may have been made or given by any other Purchaser or by any agent or employee of any other Purchaser, and no Purchaser and any of its agents or employees shall have any liability to any other Purchaser (or any other Person) relating to or arising from any such information, materials, statement or opinions. Nothing contained herein or in any Transaction Document, and no action taken by any Purchaser pursuant thereto, shall be deemed to constitute the Purchasers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by the Transaction Documents. Each Purchaser acknowledges that no other Purchaser has acted as agent for such Purchaser in connection with making its investment hereunder and that no Purchaser will be acting as agent of such Purchaser in connection with monitoring its investment in the Securities or enforcing its rights under the Transaction Documents. Each Purchaser shall be entitled to independently protect and enforce its rights, including without limitation the rights arising out of this Agreement or out of the other Transaction

Documents, and it shall not be necessary for any other Purchaser to be joined as an additional party in any proceeding for such purpose. Each Purchaser has been represented by its own separate legal counsel in its review and negotiation of the Transaction Documents. Each Purchaser also acknowledges that Wilson Sonsini Goodrich & Rosati, P.C. has rendered legal advice to the Company and not such Purchaser. The Company has elected to provide all Purchasers with the same terms and Transaction Documents for the convenience of the Company and not because it was required or requested to do so by any Purchaser.

6.18 Termination. This Agreement may be terminated and the sale and purchase of the Shares and the Prefunded Warrants abandoned at any time prior to the Closing by either the Company or any Purchaser (with respect to itself only) upon written notice to the other, if the Closing has not been consummated on or prior to 5:00 P.M., New York City time, on the Outside Date; *provided, however*, that the right to terminate this Agreement under this Section 6.18 shall not be available to any Person whose failure to comply with its obligations under this Agreement has been the cause of or resulted in the failure of the Closing to occur on or before such time. Nothing in this Section 6.18 shall be deemed to release any party from any liability for any breach by such party of the terms and provisions of this Agreement or the other Transaction Documents or to impair the right of any party to compel specific performance by any other party of its obligations under this Agreement or the other Transaction Documents. In the event of a termination pursuant to this Section 6.18, the Company shall promptly notify all non-terminating Purchasers. Upon a termination in accordance with this Section 6.18, the Company and the terminating Purchaser(s) shall not have any further obligation or liability (including arising from such termination) to the other, and no Purchaser will have any liability to any other Purchaser under the Transaction Documents as a result therefrom.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

NAME OF PURCHASER: Frazier Life Sciences Public Fund, L.P.

By: FHMLSP, L.P.
Its general partner

By: FHMLSP, L.L.C.
Its general partner

By: /s/ Albert Cha
Name: Albert Cha
Title: Managing Director
Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$ _____
Common Stock Purchase Price: \$ _____
Number of Shares to be Acquired: _____

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$ 15,999,993.80
Prefunded Warrant Purchase Price: \$ 9.40
Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 1,702,127

Address for Notice:
70 Willow Rd, Suite 200
Menlo Park, CA 94025
Telephone No.: _____
Facsimile No.: _____
E-mail Address: _____
Attention: Albert Cha

Delivery Instructions:
(if different than above)

c/o _____
Street: _____
City/State/Zip: _____
Attention: _____
Telephone No.: _____

NAME OF PURCHASER: Decheng Capital China Life Sciences USD Fund III, L.P.

By: /s/ Xiangmin Cui
Name: Xiangmin Cui
Title: Managing Director
Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$14,499,998.20
Common Stock Purchase Price: \$9.40
Number of Shares to be Acquired: 1,542,553

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$0
Prefunded Warrant Purchase Price: \$0
Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 0

Address for Notice:
3000 Sand Hill road, Building 2, Suite 110
Menlo Park, California 94025
Telephone No.: _____
Facsimile No.: _____
E-mail Address: _____
Attention: Peter Colabuono

Delivery Instructions:
(if different than above)

c/o _____
Street: _____
City/State/Zip: _____
Attention: _____
Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER: Biotechnology Value Trading Fund OS LP

By: /s/ Mark Lampert

Name: Mark Lampert

Title: President of BVF Inc., General Partner of BVF Partners L.P., Sole Member of BVF
Partners OS Ltd., General Partner of Biotechnology Value
Trading Fund OS LP

Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$713,366.00

Common Stock Purchase Price: \$9.40

Number of Shares to be Acquired: 75,890

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$0.00

Prefunded Warrant Purchase Price: \$

Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 0

Address for Notice:

44 Montgomery St, 40th Floor

San Francisco, CA 94104

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

Attention: _____

James Kratky

Delivery Instructions:
(if different than above)

c/o The Depository Trust Company

Street: 570 Washington Blvd - 5th Floor

City/State/Zip: Jersey City, NJ 07310

Attention: BNY Mellon/Branch Deposit Department

Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER: Biotechnology Value Fund, L.P.

By: /s/ Mark Lampert

Name: Mark Lampert

Title: Chief Executive Officer of BVF I GP LLC, General Partner of Biotechnology Value
Fund, L.P.

Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$6,396,408.60

Common Stock Purchase Price: \$9.40

Number of Shares to be Acquired: 680,469

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$0.00

Prefunded Warrant Purchase Price: \$

Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 0

Address for Notice:

44 Montgomery St, 40th Floor

San Francisco, CA 94104

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

Attention: _____

James Kratky

Delivery Instructions:
(if different than above)

c/o The Depository Trust Company

Street: 570 Washington Blvd - 5th Floor

City/State/Zip: Jersey City, NJ 07310

Attention: BNY Mellon/Branch Deposit Department

Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER: Biotechnology Value Fund II, L.P.

By: /s/ Mark Lampert

Name: Mark Lampert

Title: Chief Executive Officer of BVF II GP LLC, General Partner of Biotechnology Value
Fund II, L.P.

Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$4,673,360.40

Common Stock Purchase Price: \$9.40

Number of Shares to be Acquired: 497,166

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$0.00

Prefunded Warrant Purchase Price: \$

Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 0

Address for Notice:

44 Montgomery St, 40th Floor

San Francisco, CA 94104

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

Attention: _____

James Kratky

Delivery Instructions:
(if different than above)

c/o The Depository Trust Company

Street: 570 Washington Blvd - 5th Floor

City/State/Zip: Jersey City, NJ 07310

Attention: BNY Mellon/Branch Deposit Department

Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:

TCG CROSSOVER FUND I, L.P.

By: TCG Crossover GP I, LLC

By: /s/ Chen Yu

Name: Chen Yu

Title: Managing Member

Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$10,999,992.80

Common Stock Purchase Price: \$9.40

Number of Shares to be Acquired: 1,170,212

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$0

Prefunded Warrant Purchase Price: \$0

Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 0

Address for Notice:

TCG Crossover, c/o Jaime Felix

228 Hamilton Avenue, 3rd Floor, Palo Alto, CA 94403

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

Attention: _____

Delivery Instructions:
(if different than above)

c/o _____

Street: _____

City/State/Zip: _____

Attention: _____

Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER:
OMEGA FUND VI, L.P.
By: Omega Fund VI GP, L.P.,
its General Partner
By: Omega Fund VI GP Manager, Ltd.,
its General Partner

By: /s/ Otello Stampacchia
Name: Otello Stampacchia
Title: Director
Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$6,999,992.00
Common Stock Purchase Price: \$9.40
Number of Shares to be Acquired: 744,680

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$0
Prefunded Warrant Purchase Price: \$
Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: _____

Address for Notice:
888 Boylston Street, Suite 1111
Boston, MA 02199
Telephone No.: _____
Facsimile No.: _____
E-mail Address: _____
Attention: Deirdre Cunnane

Delivery Instructions:
(if different than above)

c/o _____
Street: _____
City/State/Zip: _____
Attention: _____
Telephone No.: _____

NAME OF PURCHASER: Avidity Master Fund LP

By: /s/ Michael Gregory
Name: Michael Gregory
Title: Managing Member
Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$3,149,300.80
Common Stock Purchase Price: \$9.40
Number of Shares to be Acquired: 335,032

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$4,725,351.80
Prefunded Warrant Purchase Price: \$9.40 / warrant
Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 502,697

Address for Notice:
2828 N. Harwood Street, Suite 1220

Dallas, TX 75201

Telephone No.: _____
Facsimile No.: _____
E-mail Address: _____
Attention: Michael Gregory; Andrew So

Delivery Instructions:
(if different than above)

c/o N/A
Street: _____
City/State/Zip: _____
Attention: _____
Telephone No.: _____

NAME OF PURCHASER: Avidity Capital Fund II LP

By: /s/ Michael Gregory
Name: Michael Gregory
Title: Managing Member
Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$467,180.00
Common Stock Purchase Price: \$9.40
Number of Shares to be Acquired: 49,700

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$700,300.00
Prefunded Warrant Purchase Price: \$9.40 / warrant
Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 74,500

Address for Notice:
2828 N. Harwood Street, Suite 1220

Dallas, TX 75201

Telephone No.: _____
Facsimile No.: _____
E-mail Address: _____
Attention: Michael Gregory; Andrew So

Delivery Instructions:
(if different than above)

c/o N/A
Street: _____
City/State/Zip: _____
Attention: _____
Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER: Avidity Capital HL Sub Fund III LLC

By: /s/ Michael Gregory
Name: Michael Gregory
Title: Managing Member
Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$383,520.00
Common Stock Purchase Price: \$9.40 / share
Number of Shares to be Acquired: 40,800

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$574,340.00
Prefunded Warrant Purchase Price: \$9.40 / warrant
Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 61,100

Address for Notice:
2828 N. Harwood Street, Suite 1220

Dallas, TX 75201

Telephone No.: _____
Facsimile No.: _____
E-mail Address: _____
Attention: Michael Gregory; Andrew So

Delivery Instructions:
(if different than above)

c/o N/A
Street: _____
City/State/Zip: _____
Attention: _____
Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER: 667, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment advisor to 667, L.P.,
pursuant to authority granted to it by Baker Biotech Capital, L.P.,
general partner to 667, L.P., and not as the general partner

By: /s/ Scott Lessing

Name: SCOTT LESSING

Title: PRESIDENT

Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$0 _____

Common Stock Purchase Price: \$ _____

Number of Shares to be Acquired: 0 _____

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$585,009.00 _____

Prefunded Warrant Purchase Price: \$9.40 _____

Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 62,235 _____

Address for Notice:

C/O BAKER BROS. ADVISORS LP
860 WASHINGTON STREET 3RD FL

NEW YORK, NY 10014

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

Attention: _____

SCOTT LESSING

Delivery Instructions:
(if different than above)

c/o _____

Street: _____

City/State/Zip: _____

Attention: _____

Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER: BAKER BROTHERS LIFE SCIENCES, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment advisor to Baker Brothers Life Sciences, L.P., pursuant to authority granted to it by Baker Brothers Life Sciences Capital, general partner to Baker Brothers Life Sciences, L.P., and not as the general partner

By: /s/ Scott Lessing

Name: SCOTT LESSING

Title: PRESIDENT

Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$0 _____

Common Stock Purchase Price: \$ _____

Number of Shares to be Acquired: 0 _____

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$7,414,983.20 _____

Prefunded Warrant Purchase Price: \$9.40 _____

Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: 788,828 _____

Address for Notice:

C/O BAKER BROS. ADVISORS LP

860 WASHINGTON STREET 3RD FL

NEW YORK, NY 10014

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

Attention:

SCOTT LESSING

Delivery Instructions:
(if different than above)

c/o _____

Street: _____

City/State/Zip: _____

Attention: _____

Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

PURCHASER:

OrbiMed Private Investments VI, LP

By: OrbiMed Capital GP VI LLC, its General Partner

By: OrbiMed Advisors LLC, its Managing Member

By: /s/ Carl Gordon

Name: Carl Gordon

Title: Member

Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$5,499,996.40

Common Stock Purchase Price: \$9.40

Number of Shares to be Acquired: 585,106

Address for Notice:

601 Lexington Avenue, 54th Floor

New York, NY 10022

Telephone No.:

Facsimile No.:

E-mail Address:

Attention:

General Counsel

Delivery Instructions:
(if different than above)

OrbiMed Advisors LLC

ATTN: Kevin Olsen

601 Lexington Avenue, 54th Floor

New York, NY 10022

Telephone No.:

E-mail Address:

[Signature Page to Securities Purchase Agreement]

PURCHASER:

OrbiMed Genesis Master Fund, L.P.

By: OrbiMed Capital Genesis GP LLC, its General Partner

By: OrbiMed Advisors LLC, its Managing Member

By: /s/ C. Scotland Stevens

Name: C. Scotland Stevens

Title: Member

Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$3,999,991.40

Common Stock Purchase Price: \$9.40

Number of Shares to be Acquired: 425,531

Address for Notice:

601 Lexington Avenue, 54th Floor

New York, NY 10022

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

Attention: General Counsel

Delivery Instructions:
(if different than above)

OrbiMed Advisors LLC

ATTN: Kevin Olsen

601 Lexington Avenue, 54th Floor

New York, NY 10022

Telephone No.:

E-mail Address:

[Signature Page to Securities Purchase Agreement]

NAME OF PURCHASER: Logos Global Master Fund, LP

By: /s/ Arsani William
Name: Arsani William
Title: Managing Partner
Tax ID No:

Purchase of Shares

Common Stock Subscription Amount: \$2,999,991.20
Common Stock Purchase Price: \$9.40
Number of Shares to be Acquired: 319,148

Purchase of Prefunded Warrants

Prefunded Warrant Subscription Amount: \$ _____
Prefunded Warrant Purchase Price: \$ _____
Underlying Prefunded Warrant Shares Subject to Prefunded Warrant to be Acquired: _____

Address for Notice:
Logos Capital

1 Letterman Dr, Ste D3-700, San Francisco, CA 94129

Telephone No.: _____
Facsimile No.: _____
E-mail Address: _____
Attention: Virginia Yee

Delivery Instructions:
(if different than above)

c/o _____
Street: _____
City/State/Zip: _____
Attention: _____
Telephone No.: _____

[Signature Page to Securities Purchase Agreement]

EXHIBITS:

- A: Form of Prefunded Warrant
- B: Form of Registration Rights Agreement
- C: Form of Exchange Agreement
- D-1: Accredited Investor Questionnaire
- D-2: Book-Entry Questionnaire
- E: Form of Opinion of Company Counsel
- F: Form of Irrevocable Transfer Agent Instructions
- G: Form of Secretary's Certificate
- H: Form of Officer's Certificate
- I: Wire Instructions
- J: Form of Lock-Up Agreement
- K: List of Directors and Executive Officers Executing Lock-Up Agreements

EXHIBIT A

FORM OF PREFUNDED WARRANT

(Circulated separately)

EXHIBIT B

FORM OF REGISTRATION RIGHTS AGREEMENT

(Circulated separately)

EXHIBIT C

FORM OF EXCHANGE AGREEMENT

(Circulated separately)

INSTRUCTION SHEET

(to be read in conjunction with the entire Securities Purchase Agreement and Registration Rights Agreement)

A. Complete the following items in the Securities Purchase Agreement and/or Registration Rights Agreement:

1. Provide the information regarding the Purchaser requested on the signature page. The Securities Purchase Agreement and the Registration Rights Agreement must be executed by an individual authorized to bind the Purchaser.
2. Exhibit D-1 – Accredited Investor Questionnaire:
Provide the information requested by the Accredited Investor Questionnaire
3. Exhibit D-2 – Book-Entry Questionnaire:
Provide the information requested by the Book-Entry Questionnaire
4. Annex B to the Registration Rights Agreement – Selling Stockholder Notice and Questionnaire
Provide the information requested by the Selling Stockholder Notice and Questionnaire
5. Return the signed Securities Purchase Agreement and Registration Rights Agreement to:

Aletha Tarn
Wilson Sonsini Goodrich & Rosati, P.C.
701 Fifth Avenue, Suite 5100
Seattle, Washington 98104
Tel: (206) 883 - 2615
Email: atarn@wsgr.com

- B. Instructions regarding the transfer of funds for the purchase of Shares and Prefunded Warrants (if applicable) are set forth on Exhibit H to the Securities Purchase Agreement.
- C. Review the disclosure made to you pursuant to Rule 506(e) under the Securities Act of 1933, as amended, included at the end of this packet.

EXHIBIT D-1

ACCREDITED INVESTOR QUESTIONNAIRE

(ALL INFORMATION WILL BE TREATED CONFIDENTIALLY)

To: Alpine Immune Sciences, Inc.

This Investor Questionnaire (“*Questionnaire*”) must be completed by each potential investor in connection with the offer and sale of the shares of the common stock, par value \$0.001 per share, and shares of common stock that may be issued upon exercise of certain prefunded warrants (collectively, the “*Securities*”), of Alpine Immune Sciences, Inc., a Delaware corporation (the “*Corporation*”). The Securities are being offered and sold by the Corporation without registration under the Securities Act of 1933, as amended (the “*Act*”), and the securities laws of certain states, in reliance on the exemptions contained in Section 4(a)(2) of the Act and on Regulation D promulgated thereunder and in reliance on similar exemptions under applicable state laws. The Corporation must determine that a potential investor meets certain suitability requirements before offering or selling Securities to such investor. The purpose of this Questionnaire is to assure the Corporation that each investor will meet the applicable suitability requirements. The information supplied by you will be used in determining whether you meet such criteria, and reliance upon the private offering exemptions from registration is based in part on the information herein supplied.

This Questionnaire does not constitute an offer to sell or a solicitation of an offer to buy any security. Your answers will be kept strictly confidential. However, by signing this Questionnaire, you will be authorizing the Corporation to provide a completed copy of this Questionnaire to such parties as the Corporation deems appropriate in order to ensure that the offer and sale of the Securities will not result in a violation of the Act or the securities laws of any state and that you otherwise satisfy the suitability standards applicable to purchasers of the Securities. All potential investors must answer all applicable questions and complete, date and sign this Questionnaire. Please print or type your responses and attach additional sheets of paper if necessary to complete your answers to any item.

PART A. BACKGROUND INFORMATION

Name of Beneficial Owner of the Securities: _____

Business Address: _____
(Number and Street)

(City) (State) (Zip Code)

Telephone Number: (____) _____

If a corporation, partnership, limited liability company, trust or other entity:

Type of entity: _____
State of formation: _____ Approximate Date of formation: _____

Were you formed for the purpose of investing in the securities being offered?

Yes ____ No ____

If an individual:

Residence Address:

_____ (Number and Street)

_____ (City)

_____ (State)

_____ (Zip Code)

Telephone Number: (____) _____

Age: _____

Citizenship: _____

Where registered to vote: _____

Set forth in the space provided below the state(s), if any, in the United States in which you maintained your residence during the past two years and the dates during which you resided in each state:

Are you a director or executive officer of the Corporation?

Yes ____ No ____

Social Security or Taxpayer Identification No. _____

PART B. ACCREDITED INVESTOR QUESTIONNAIRE

In order for the Company to offer and sell the Securities in conformance with state and federal securities laws, the following information must be obtained regarding your investor status. Please initial each category applicable to you as a Purchaser of Securities of the Company.

- ___ (1) A bank as defined in Section 3(a)(2) of the Securities Act, or any savings and loan association or other institution as defined in Section 3(a)(5)(A) of the Securities Act whether acting in its individual or fiduciary capacity;
- ___ (2) A broker or dealer registered pursuant to Section 15 of the Securities Exchange Act of 1934;
- ___ (3) An insurance company as defined in Section 2(13) of the Securities Act;
- ___ (4) An investment company registered under the Investment Company Act of 1940 or a business development company as defined in Section 2(a)(48) of that Act;
- ___ (5) A Small Business Investment Company licensed by the U.S. Small Business Administration under Section 301(c) or (d) of the Small Business Investment Act of 1958;
- ___ (6) A plan established and maintained by a state, its political subdivisions, or any agency or instrumentality of a state or its political subdivisions, for the benefit of its employees, if such plan has total assets in excess of \$5,000,000;

- ___ (7) An employee benefit plan within the meaning of the Employee Retirement Income Security Act of 1974, if the investment decision is made by a plan fiduciary, as defined in Section 3(21) of such act, which is either a bank, savings and loan association, insurance company, or registered investment adviser, or if the employee benefit plan has total assets in excess of \$5,000,000 or, if a self-directed plan, with investment decisions made solely by persons that are accredited investors;
- ___ (8) A private business development company as defined in Section 202(a)(22) of the Investment Advisers Act of 1940;
- ___ (9) An organization described in Section 501(c)(3) of the Internal Revenue Code, a corporation, Massachusetts or similar business trust, a partnership, or a limited liability company, not formed for the specific purpose of acquiring the Securities, with total assets in excess of \$5,000,000;
- ___ (10) A trust, with total assets in excess of \$5,000,000, not formed for the specific purpose of acquiring the Securities, whose purchase is directed by a sophisticated person who has such knowledge and experience in financial and business matters that such person is capable of evaluating the merits and risks of investing in the Company;
- ___ (11) A Rural Business Investment Company as defined in Section 384A of the Consolidated Farm and Rural Development Act;
- ___ (12) An investment advisor registered pursuant to Section 203 of the Investment Advisers Act of 1940 or registered pursuant to the laws of a state;
- ___ (13) An investment advisor relying on the exemption from registering with the SEC under Section 203(l) or (m) of the Investment Advisers Act of 1940;
- ___ (14) An entity, of a type not listed above, not formed for the specific purpose of acquiring the securities offered, owning investments in excess of \$5,000,00 (for purposes of this category, “investments” is defined in Rule 2a51-1(b) under the Investment Company Act of 1940;
- ___ (15) A “family office,” as defined in Rule 202(a)(11)(G) 1 under the Investment Advisers Act of 1940 (i) with assets under management in excess of \$5,000,000; (ii) that is not formed for the specific purpose of acquiring the securities offered; and (iii) whose prospective investment is directed by a person who has such knowledge and experience in financial and business matters that such family office is capable of evaluating the merits and risks of the prospective investment (That person must complete question 5 below in this questionnaire);
- ___ (16) A “family client,” as defined in Rule 202(a)(11)(G) 1 under the Investment Advisers Act of 1940, of a family office meeting the requirements described in the item above and whose prospective investment in the Company is directed by such family office by a person who has such knowledge and experience in financial and business matters that such family office is capable of evaluating the merits and risks of the prospective investment (That person must complete question 5 below in this questionnaire);

- ___(17) A natural person whose individual net worth, or joint net worth with that person's spouse (in each case, excluding the value of such person's primary residence), at the time of his purchase exceeds \$1,000,000;
- ___(18) A natural person who had an individual income in excess of \$200,000 in each of the two most recent years, or joint income with that person's spouse in excess of \$300,000, in each of those years, and has a reasonable expectation of reaching the same income level in the current year;
- ___(19) An executive officer or director of the Company;
- ___(20) An entity in which all of the equity owners qualify under any of the above subparagraphs. If the undersigned belongs to this investor category only, list the equity owners of the undersigned, and the investor category which each such equity owner satisfies.

A. FOR EXECUTION BY AN INDIVIDUAL:

_____ By _____
 Date _____
 Print Name: _____

B. FOR EXECUTION BY AN ENTITY:

_____ Entity Name: _____
 Date _____ By _____
 Print Name: _____
 Title: _____

C. ADDITIONAL SIGNATURES (if required by partnership, corporation or trust document):

_____ Entity Name: _____
 Date _____ By _____
 Print Name: _____
 Title: _____
 _____ Entity Name: _____
 Date _____ By _____
 Print Name: _____
 Title: _____

EXHIBIT D-2

BOOK-ENTRY QUESTIONNAIRE

Pursuant to Section 2.2(b) of the Agreement, please provide us with the following information:

1. The exact name that the Securities are to be registered in (this is the name that will appear on the book-entry notation(s)). You may use a nominee name if appropriate: _____
2. The relationship between the Purchaser of the Securities and the Registered Holder listed in response to Item 1 above: _____
3. The mailing address, telephone and telecopy number of the Registered Holder listed in response to Item 1 above: _____

4. The Tax Identification Number (or, if an individual, the Social Security Number) of the Registered Holder listed in response to Item 1 above: _____

EXHIBIT E

FORM OF OPINION OF COMPANY COUNSEL

1. The Company is a corporation duly incorporated and validly existing as a corporation under the laws of the State of Delaware and is in good standing under such laws. The Company has requisite corporate power and authority to own, lease and operate its properties and assets, and to carry on its business as described in the Disclosure Materials and to carry out and perform its obligations pursuant to the Transaction Documents. The Company is qualified to do business as a foreign corporation in the State of Washington.
2. The authorized capital stock of the Company consists of 200,000,000 shares of common stock, par value \$0.001 per share and 10,000,000 shares of preferred stock, par value \$0.001 per share.
3. The Shares delivered on the date hereof have been duly authorized and are validly issued, fully paid and non-assessable. The Prefunded Warrant Shares issuable upon exercise of the Prefunded Warrants based on the exercise price in effect on the date hereof have been duly authorized and reserved for issuance and, when issued and delivered upon exercise by a holder in accordance with the provisions of the Prefunded Warrants, will be duly authorized, validly issued, fully paid and non-assessable.
4. Each of the Transaction Documents has been duly authorized, executed and delivered by the Company and constitutes a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms.
5. The execution and delivery by the Company of the Transaction Documents, the performance by the Company of its obligations pursuant thereto, and the issuance and sale of the Securities being delivered on the date hereof pursuant to the Transaction Documents do not violate any provision of (i) the Certificate of Incorporation or the Bylaws; (ii) any U.S. federal, Washington or New York state law known to us to be customarily applicable to transactions of the nature contemplated in the Transaction Documents; or (iii) the DGCL.
6. The execution and delivery by the Company of the Transaction Documents, the performance by the Company of its obligations pursuant thereto, and the issuance and sale of the Securities being delivered on the date hereof pursuant to the Transaction Documents do not breach or constitute a default under any Reviewed Agreement or violate any Reviewed Judgment.
7. No consent, approval, authorization of, or designation, declaration or filing with any governmental authority on the part of the Company is required for the valid execution and delivery of the Transaction Documents or the issuance and sale of the Securities, except (i) such as may have been obtained or made under the Securities Act or the Exchange Act, (ii) those that have been made under the rules of The Nasdaq Stock Market LLC, (iii) such consents, approvals, authorizations, orders, registrations or qualifications as may be required under applicable state securities or Blue Sky laws in connection with the purchase and distribution of the Securities, and (iv) as otherwise may be expressly contemplated by the Transaction Documents.
8. No registration of the Securities under the Securities Act is required for the offer and sale of the Common Stock and the Prefunded Warrants (including the Prefunded Warrant Shares if such Prefunded Warrant Shares were issued upon exercise as of the date hereof) to the Purchasers in the manner contemplated by the Purchase Agreement, it being understood that no opinion is expressed as to any subsequent resale of the Securities.

9. Except as disclosed in the SEC Reports or otherwise expressly waived in writing, there are no contracts, agreements or understandings known to us between the Company and any person granting such person the right to require the Company to file a registration statement under the Securities Act with respect to any securities of the Company owned or to be owned by such person or to require the Company to include such securities in the securities to be registered pursuant to the Registration Rights Agreement.

10. The Company is not, as of the date hereof, required to register as an “investment company” as such term is defined in the Investment Company Act.

EXHIBIT F

FORM OF IRREVOCABLE TRANSFER AGENT INSTRUCTIONS (COMMON STOCK)

As of September [●], 2021

Broadridge Corporate Solutions, Inc.
51 Mercedes Way
Edgewood, NY 11717
Attn: Stephanie Manzanares

Ladies and Gentlemen:

Reference is made to that certain Securities Purchase Agreement, dated as of September [___], 2021 (the “*Agreement*”), by and among Alpine Immune Sciences, Inc., a Delaware corporation (the “*Company*”), and the purchasers named on the signature pages thereto (collectively, and including permitted transferees, the “*Holder*s”), pursuant to which the Company is issuing to the Holders shares (the “*Shares*”) of Common Stock of the Company, par value \$0.001 per share (the “*Common Stock*”) and prefunded warrants (the “*Prefunded Warrants*”) exercisable for shares of common stock. Capitalized terms used but not defined in this letter have the meanings assigned to them in the Agreement.

This letter shall serve as our irrevocable authorization and direction to you (*provided* that you are the transfer agent of the Company at such time and the conditions set forth in this letter are satisfied), subject to any stop transfer instructions that we may issue to you from time to time, if any:

(i) to issue book-entry statements in the name of each Holder representing the number of Shares issuable pursuant to the Agreement as set forth on the schedule of purchasers (the “*Schedule of Purchasers*”) attached hereto as Exhibit A, registered in the name of each such Holder, with such Shares bearing the restrictive legends identified on the Schedule of Purchasers;

(ii) to issue book-entry statements representing shares of Common Stock upon transfer or resale of the Shares;

(iii) to reserve a sufficient number of shares of Common Stock of the Company (initially, 3,191,487 shares, which number may be subsequently adjusted by you pursuant to written instructions from the Company) for issuance upon exercise of the Prefunded Warrants (the “*Prefunded Warrant Shares*”);

(iv) to issue book-entry statements representing the Prefunded Warrant Shares to or upon the order of a Holder from time to time upon delivery to you of a properly completed and duly executed Exercise Notice, in the form attached hereto as Annex I, which has been acknowledged by the Company as indicated by the signature of a duly authorized officer of the Company thereon together with indication of receipt of the exercise price therefor, subject to the terms and conditions of this letter. You are not responsible for determining the accuracy of any Exercise Notice and may rely on the instructions presented by or on behalf of the Company or the Holder. In the event there are insufficient reserve shares of Common Stock to accommodate an Exercise Notice, the Exercise Notice should be completed using authorized but unissued shares of Common Stock of the Company so long as there are sufficient such shares to do so not otherwise reserved.

The Company hereby agrees that, subsequent to the execution and delivery of this letter, the Company will execute and deliver (or shall cause the execution and delivery) any further legal instruments as are reasonably requested by you in order to establish the reserve described above.

You acknowledge and agree that so long as you have received (a) written confirmation from the Company's legal counsel that either (1) a registration statement covering resales of the Shares and the Prefunded Warrant Shares has been declared effective by the Securities and Exchange Commission (the "*Commission*") under the Securities Act of 1933, as amended (the "*Securities Act*"), or (2) the Shares and the Prefunded Warrant Shares have been sold in conformity with Rule 144 under the Securities Act ("*Rule 144*") or are eligible for sale under the applicable provisions of Rule 144, and (b) if applicable, a copy of such registration statement, then, unless otherwise required by law, within three (3) Trading Days of your receipt of a notice of transfer, Shares or the Exercise Notice, you shall issue the book-entry statements representing the Shares and/or the Prefunded Warrant Shares, registered in the names of such Holders or transferees, as the case may be, and such book-entry statements shall not bear any legend restricting transfer of the Shares or the Prefunded Warrant Shares thereby and should not be subject to any stop-transfer restriction; *provided, however*, that you shall be entitled to request and receive customary representation letters from the Company, the applicable Holder and/or other relevant parties as may be required pursuant to your bona fide legend removal policies prior to the issuance of Shares that do not bear a restrictive legend; *provided, further* that if you shall be entitled to request and receive customary representation letters from the Company, the applicable Holder and/or other relevant parties as may be required pursuant to your bona fide legend removal policies prior to the issuance of Shares that do not bear a restrictive legend; *provided, further* that if that if such Shares and Prefunded Warrant Shares are not registered for resale under the Securities Act are not eligible for sale under the applicable provisions of Rule 144, then the book-entry statements for such Shares and/or Prefunded Warrant Shares shall bear a legend similar in substance and effect to the following:

THE OFFER AND SALE OF THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR ANY APPLICABLE STATE SECURITIES LAWS. THE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED, ASSIGNED OR OTHERWISE DISPOSED OF (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN EACH CASE IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY AND ITS TRANSFER AGENT OR (II) UNLESS SOLD PURSUANT TO RULE 144 UNDER THE SECURITIES ACT. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES; PROVIDED THAT IN CONNECTION WITH ANY FORECLOSURE OR TRANSFER OF THE SECURITIES, THE TRANSFEROR SHALL COMPLY WITH THE PROVISIONS HEREIN, IN THE SECURITIES PURCHASE AGREEMENT AND THE REGISTRATION RIGHTS AGREEMENT, AND UPON FORECLOSURE OR TRANSFER OF THE SECURITIES, SUCH FORECLOSING PERSON OR TRANSFEREE SHALL COMPLY WITH ALL PROVISIONS CONTAINED HEREIN, IN THE

SECURITIES PURCHASE AGREEMENT AND THE REGISTRATION RIGHTS AGREEMENT.

A form of written confirmation from the Company's outside legal counsel that a registration statement covering resales of the Shares and the Prefunded Warrant Shares has been declared effective by the Commission under the Securities Act is attached hereto as Annex II. The Company hereby agrees to promptly notify you in the event that any registration statement covering resales of the Shares and the Prefunded Warrant Shares is no longer effective or if any stop order suspending its effectiveness has been issued or that any proceedings for that purpose are pending before, or threatened by, the Commission.

The Company shall indemnify you and your officers, directors, principals, partners, agents and representatives, and hold each of them harmless from and against any and all loss, liability, damage, claim or expense (including the reasonable fees and disbursements of its attorneys) incurred by or asserted against you or any of them arising out of or in connection with the instructions set forth herein, the performance of your duties hereunder and otherwise in respect hereof, including the costs and expenses of defending yourself or yourselves against any claim or liability hereunder, except that the Company shall not be liable hereunder as to matters in respect of which it is determined by a court of competent jurisdiction in a final, non-appealable judgment that you have acted with gross negligence or in bad faith. You shall have no liability to the Company in respect to any action taken or any failure to act in respect of this if such action was taken or omitted to be taken in good faith, and you shall be entitled to rely in this regard on the advice of counsel. The Board of Directors of the Company (or a duly authorized committee thereof) has approved the foregoing (irrevocable instructions) and does hereby extend the Company's irrevocable agreement to indemnify your firm for all loss, liability or expense in carrying out the authority and direction herein contained on the terms herein set forth.

Furthermore, you:

- a) shall have no duties or obligations other than those set forth herein and no duties or obligations shall be inferred or implied;
- b) may rely on and shall be held harmless by the Company in acting upon any certificate, statement, instrument, opinion, notice, letter, facsimile transmission, telegram or other document, or any security delivered to you, and reasonably believed by it to be genuine and to have been made or signed by the proper party or parties;
- c) may rely on and shall be held harmless by the Company in acting upon written or oral instructions or statements from the Company with respect to any matter relating to your acting as transfer agent hereunder;
- d) may consult with counsel satisfactory to you (including counsel for the Company) and shall be held harmless by the Company in relying on the advice or opinion of such counsel in respect of any action taken, suffered or omitted by it hereunder in good faith and in accordance with such advice or opinion of such counsel;
- e) solely shall make the final determination as to whether or not the Exercise Notice is completely executed, including with respect to the Company acknowledgement affixed thereto, and you shall be held harmless by the Company in respect of any action taken, suffered or omitted by you hereunder in good faith and in accordance with your determination;
- f) shall not be obligated to take any legal or other action hereunder which might, in your judgment subject or expose you to any expense or liability unless you shall have been furnished with an indemnity satisfactory to you, except with respect to any actions taken by you in connection with complying with a complete Exercise Notice which has been provided by the Holder and the Company in accordance with the terms hereof, which, for the avoidance of doubt, shall not require a separate indemnity in your favor;
- g) shall not be liable or responsible for any recital or statement contained in the Agreement or any other documents relating thereto; and

h) shall not be liable or responsible for any failure of the Company to comply with any of its obligations relating to the transaction contemplated by the Agreement, including without limitation obligations under applicable regulation or law.

This letter does not contemplate any service to be provided by you in the case where any condition to the exercise of the Prefunded Warrants have not been met in a timely manner. If necessary, service to be provided by you under such circumstances and remuneration to you therefore, will be established in a mutual agreement between you and the Company, which will become a part of this letter.

The Company agrees that in the event that you resign as the Company's transfer agent, the Company shall engage a suitable replacement transfer agent that will agree to serve as transfer agent for the Company and be bound by the terms and conditions of this letter within five (5) business days. For the avoidance of doubt, nothing in this letter shall be construed to limit, in any way, your right to resign as transfer agent to the Company pursuant to the terms of the applicable agreements between you and Company. For the avoidance of doubt, following your resignation, you shall have no obligations under this letter.

You reserve the right to complete any transaction pending at the time of your resignation or termination.

The Company hereby authorizes the issuance of such number of shares of Common Stock as will be necessary to fully exercise the Prefunded Warrants under their terms and any such shares of Common Stock shall be considered fully paid and non-assessable at the time of their issuance. The Company hereby represents and warrants that the shares to be issued in connection with the full exercise of the Prefunded Warrants will be, at the time of issuance, duly authorized by the Company and such issuance will not conflict with or violate the certificate of incorporation, bylaws or equivalent organizational documents of the Company.

Nothing in this letter shall require or be construed in any way to require that you take or not do or take any action that would be contrary to any federal or state law, rule, or regulation including but expressly not limited to both the Securities Act of 1933, as amended, and the Securities and Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder by the Securities and Exchange Commission.

Please be advised that the Holders are relying upon this letter as an inducement to enter into the Agreement and, accordingly, each Holder is a third party beneficiary to these instructions.

Very truly yours,

ALPINE IMMUNE SCIENCES, INC.

By: _____
Name: _____
Title: _____

Acknowledged and Agreed:

BROADRIDGE CORPORATE ISSUER SOLUTIONS, INC

By: _____

Name: _____

Title: _____

Date: _____, _____

Annex I

FORM OF EXERCISE NOTICE

[To be executed by the Holder to purchase shares of Common Stock under the Prefunded Warrant]

Ladies and Gentlemen:

- (1) The undersigned is the Holder of Warrant No. _____ (the “Warrant”) issued by Alpine Immune Sciences, Inc., a Delaware corporation (the “Company”). Capitalized terms used herein and not otherwise defined herein have the respective meanings set forth in the Warrant.
- (2) The undersigned hereby exercises its right to purchase _____ Warrant Shares pursuant to the Warrant.
- (3) The Holder intends that payment of the Exercise Price shall be made as (check one):
- Cash Exercise
- “Cashless Exercise” under Section 10 of the Warrant
- (4) If the Holder has elected a Cash Exercise, the Holder shall pay the sum of \$_____ in immediately available funds to the Company in accordance with the terms of the Warrant.
- (5) Pursuant to this Exercise Notice, the Company shall deliver to the Holder Warrant Shares determined in accordance with the terms of the Warrant.
- (6) By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934) permitted to be owned under Section 12 of the Warrant to which this notice relates.
- (7) By its delivery of this Exercise Notice and pursuant to Section 4(b) of the Warrant, the undersigned certifies to the Company that its representations contained in Sections 3.2(b), (c) and (d) of the Purchase Agreement are true and correct as of the date hereof as if remade in their entirety (or, in the case of any transferee Holder that is not a party to the Purchase Agreement, such transferee Holder’s certification to the Company that such representations are true and correct as to such transferee Holder as of the date hereof).

Dated: _____
Name of Holder: _____
By: _____
Name: _____
Title: _____

(Signature must conform in all respects to name of Holder as specified on the face of the Warrant)

ACKNOWLEDGEMENT

The Company hereby acknowledges this Exercise Notice and receipt of the appropriate exercise price and hereby directs Broadridge Corporate Issuer Solutions, Inc. to issue the above indicated number of shares of Common Stock in accordance with the Irrevocable Transfer Agent Instructions dated _____, _____, from the Company and acknowledged and agreed to by Broadridge Corporate Issuer Solutions, Inc.

ALPINE IMMUNE SCIENCES, INC.

By: _____
Name: _____
Title: _____

Annex II

FORM OF NOTICE OF EFFECTIVENESS OF REGISTRATION STATEMENT

Broadridge Corporate Issuer Solutions, Inc.
1717 Arch Street STE 1300
Philadelphia PA 19103
Attn: Stephanie Manzanares

Re: Alpine Immune Sciences, Inc.

Ladies and Gentlemen:

We are counsel to Alpine Immune Sciences, Inc., a Delaware corporation (the “*Company*”), and have represented the Company in connection with that certain Securities Purchase Agreement, dated as of September [___], 2021, entered into by and among the Company and the purchasers named therein (collectively, the “*Purchasers*”) pursuant to which the Company issued to the Purchasers shares of the Company’s common stock, \$0.001 par value per share (the “*Common Stock*”) and prefunded warrants exercisable for shares of Common Stock (the “*Prefunded Warrants*”). Pursuant to that certain Registration Rights Agreement of even date, the Company agreed to register the resale of the Common Stock, including the shares of Common Stock issuable upon exercise of the Prefunded Warrants (collectively, the “*Registrable Securities*”), under the Securities Act of 1933, as amended (the “*Securities Act*”). In connection with the Company’s obligations under the Registration Rights Agreement, on __, ____, the Company filed a Registration Statement on Form S-3 (File No. 333-_) (the “*Registration Statement*”) with the Securities and Exchange Commission (the “*Commission*”) relating to the Registrable Securities which names each of the Purchasers as a selling stockholder thereunder.

In connection with the foregoing, we advise you that a member of the Commission’s staff has advised us by telephone that the Commission has entered an order declaring the Registration Statement effective under the Securities Act at ____ [a.m.][p.m.] on _____, ____, and we have no knowledge, after review of the information contained on the Commission’s EDGAR website, that any stop order suspending its effectiveness has been issued or that any proceedings for that purpose are pending before, or threatened by, the Commission and the Registrable Securities are available for resale under the Securities Act pursuant to the Registration Statement.

This letter shall serve as our standing notice to you that the Common Stock may be freely transferred by the Purchasers pursuant to the Registration Statement. You need not require further letters from us to effect any future legend-free issuance or reissuance of shares of Common Stock to the Purchasers or the transferees of the Purchasers, as the case may be, as contemplated by the Company’s Irrevocable Transfer Agent Instructions dated _____, ____, provided at the time of such reissuance, the Company has not otherwise notified you that the Registration Statement is unavailable for the resale of the Registrable Securities. This letter shall serve as our standing instructions with regard to this matter.

Very truly yours,

WILSON SONSINI GOODRICH & ROSATI, PROFESSIONAL CORPORATION

By: _____

EXHIBIT G

FORM OF SECRETARY'S CERTIFICATE

The undersigned hereby certifies that he is the duly elected, qualified and acting Secretary of Alpine Immune Sciences, Inc., a Delaware corporation (the "*Company*"), and that as such he is authorized to execute and deliver this certificate in the name and on behalf of the Company and in connection with the Securities Purchase Agreement, dated as of September [___], 2021, by and among the Company and the investors party thereto (the "*Securities Purchase Agreement*"), and further certifies in his official capacity, in the name and on behalf of the Company, the items set forth below. Capitalized terms used but not otherwise defined herein shall have the meaning set forth in the Securities Purchase Agreement.

1. Attached hereto as Exhibit A is a true, correct and complete copy of the resolutions duly adopted by the Board of Directors of the Company and the Pricing Committee of the Board of Directors. Such resolutions have not in any way been amended, modified, revoked or rescinded, have been in full force and effect since their adoption to and including the date hereof and are now in full force and effect.
2. Attached hereto as Exhibit B is a true, correct and complete copy of the Certificate of Incorporation of the Company, together with any and all amendments and certificates of designation thereto currently in effect, and no action has been taken to further amend, modify or repeal such Certificate of Incorporation, the same being in full force and effect in the attached form as of the date hereof.
3. Attached hereto as Exhibit C is a true, correct and complete copy of the Bylaws of the Company and any and all amendments thereto currently in effect, and no action has been taken to further amend, modify or repeal such Bylaws, the same being in full force and effect in the attached form as of the date hereof.
4. Each person listed below has been duly elected or appointed to the position(s) indicated opposite his name and is duly authorized to sign the Securities Purchase Agreement and each of the Transaction Documents on behalf of the Company, and the signature appearing opposite such person's name below is such person's genuine signature.

<u>Name</u>	<u>Position</u>	<u>Signature</u>
Mitchell H. Gold	Chief Executive Officer	_____
Stanford Peng	President and Head of Research and Development	_____
Paul Rickey	Chief Financial Officer	_____

IN WITNESS WHEREOF, the undersigned has hereunto set his hand as of this ____ day of September 2021.

Paul Rickey, Secretary

I, Mitchell H. Gold, Chief Executive Officer, hereby certify that Paul Rickey is the duly elected, qualified and acting Secretary of the Company and that the signature set forth above is his true signature.

Mitchell H. Gold, Chief Executive Officer

Resolutions

Certificate of Incorporation

Bylaws

EXHIBIT H

FORM OF OFFICER'S CERTIFICATE

The undersigned, the Chief Executive Officer of Alpine Immune Sciences, Inc., a Delaware corporation (the "*Company*"), pursuant to Section 5.1(i) of the Securities Purchase Agreement, dated as of September [___], 2021, by and among the Company and the investors signatory thereto (the "*Securities Purchase Agreement*"), hereby represents, warrants and certifies as follows (capitalized terms used but not otherwise defined herein shall have the meaning set forth in the Securities Purchase Agreement):

1. The representations and warranties of the Company contained in the Securities Purchase Agreement are true and correct in all material respects (except for those representations and warranties which are qualified as to materiality or Material Adverse Effect, in which case, such representations and warranties shall be true and correct in all respects) as of the date when made and as of the date hereof, as though made on and as of such date, except for such representations and warranties that speak as of a specific date.
2. The Company has performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by it at or prior to the date hereof.

IN WITNESS WHEREOF, the undersigned has executed this certificate this ___ day of _____, ____.

Mitchell H. Gold, Chief Executive Officer

EXHIBIT H

WIRE INSTRUCTIONS

EXHIBIT J

FORM OF LOCK-UP AGREEMENT

September [], 2021

Alpine Immune Sciences, Inc.
188 East Blaine Street, Suite 200
Seattle, WA 98102
Attention: Chief Financial Officer

Re: Alpine Immune Sciences, Inc. – Private Placement

Dear Sirs and Madams:

This letter agreement (“Agreement”) is being delivered to you in connection with the proposed private placement by Alpine Immune Sciences, Inc., a Delaware corporation (the “Company”), relating to the proposed private placement (the “Offering”) of shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”) and prefunded warrants to purchase Common Stock (the “Warrants” and together with the Common Stock, the “Securities”).

In light of the benefits that the Offering will confer upon the undersigned in his, her or its capacity as a securityholder and/or an officer, director or employee of the Company, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned agrees with the Company that, during the period beginning on the date hereof through and including the date that is the 60th day after the date of the Securities Purchase Agreement associated with the Offering (the “Lock-Up Period”), the undersigned will not, without the prior written consent of the Company, directly or indirectly, (i) offer, sell, assign, transfer, pledge, contract to sell, lend or otherwise dispose of, or announce the intention to otherwise dispose of, any shares of Common Stock (including, without limitation, Common Stock which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations promulgated under the Securities Act of 1933, as amended (the “Securities Act”) as the same may be amended or supplemented from time to time (such shares, the “Beneficially Owned Shares”)) or securities convertible into or exercisable or exchangeable for Common Stock, (ii) enter into, or announce the intention to enter into, any swap, hedge or similar agreement or arrangement (including, without limitation, the purchase or sale of, or entry into, any put or call option, or combination thereof, forward, swap or any other derivative transaction or instrument, however described or defined) that transfers, is designed to transfer or reasonably could be expected to transfer (whether by the undersigned or someone other than the undersigned) in whole or in part, directly or indirectly, the economic risk of ownership of the Beneficially Owned Shares or securities convertible into or exercisable or exchangeable for Common Stock, whether now owned or hereafter acquired by the undersigned or with respect to which the undersigned has or hereafter acquires the power of disposition (the “Prohibited Activity”), or (iii) engage in, or announce the intention to

engage in, any short selling of the Common Stock or securities convertible into or exercisable or exchangeable for Common Stock. The undersigned represents and warrants that the undersigned is not, and has not caused or directed any of its affiliates to be or become, currently a party to any agreement or arrangement that is designed to or which reasonably could be expected to lead to or result in any Prohibited Activity during the Lock-Up Period.

The restrictions set forth in the immediately preceding paragraph shall not apply to:

(1) any transfers made by the undersigned (a) as a bona fide gift or gifts, (b) by will or other testamentary document or intestate succession upon the death of the undersigned, (c) to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned, (d) to a spouse, former spouse, child or other dependent pursuant to a domestic relations order or pursuant to a settlement agreement in connection with a domestic relations matter, or (e) pursuant to any exchange of “underwater” options with the Company;

(2) if the undersigned is a corporation, partnership, limited liability company or other business entity, any transfers or distributions to any stockholder, partner or member of, or owner of a similar equity interest in, the undersigned, as the case may be, if, in any such case, such transfer is not for value;

(3) if the undersigned is a corporation, partnership, trust, limited liability company or other similar entity, any transfer made by the undersigned (a) in connection with the sale or other bona fide transfer in a single transaction of all or substantially all of the undersigned’s capital stock, partnership interests, membership interests or other similar equity interests, as the case may be, or all or substantially all of the undersigned’s assets, in any such case not undertaken for the purpose of avoiding the restrictions imposed by this Agreement, or (b) to another corporation, partnership, limited liability company or other business entity so long as the transferee is an affiliate (as defined below) of the undersigned and such transfer is not for value;

(4) transactions relating to Common Stock or other securities convertible into or exercisable or exchangeable for Common Stock acquired in the Offering or open market transactions after completion of the Offering, provided that no such transaction is required to be, or is, publicly announced (whether on Form 4, Form 5 or otherwise) during the Lock-Up Period;

(5) the sale of the Company’s securities pursuant to a plan, contract or instruction that satisfies all of the requirements of Rule 10b5-1(c)(1)(i)(B) (a “10b5-1 Plan”) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”) that was in effect prior to the date hereof;

(6) the entry, by the undersigned, at any time on or after the date of the Securities Purchase Agreement, of any 10b5-1 Plan, provided, however, that such plan does not provide for, or permit, the sale of any Common Stock during the Lock-up Period and no public announcement or filing is voluntarily made or required regarding such plan during the Lock-Up Period; and

(7) transfer of shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of the Common Stock involving a “change of control” of the Company occurring after the consummation of the Offering, that has been approved by the board of directors of the Company, provided, that if the tender offer, merger, consolidation or other such transaction is not completed, the Common Stock owned by the undersigned shall remain subject to the restrictions contained in this letter agreement;

provided, however, that in the case of any transfer described in clauses (1)(a), 1(b), 1(c), (2) or (3) above, it shall be a condition to the transfer that (A) the transferee executes and delivers to the Company not later than one business day prior to such transfer, a written agreement, in substantially the form of this Agreement and otherwise reasonably satisfactory in form and substance to the Company, and (B) in the case of any transfer described in clause (1), (2), or (3) above, no public announcement or filing is voluntarily made regarding such transfer during the Lock-Up Period and if the undersigned is required to file a report under Section 16(a) of the Exchange Act, reporting a reduction in beneficial ownership of shares of Common Stock or

Beneficially Owned Shares or any securities convertible into or exercisable or exchangeable for Common Stock or Beneficially Owned Shares during the Lock-Up Period, the undersigned shall include a statement in such report to the effect that, (A) in the case of any transfer pursuant to clause (1) above, describes the details of the applicable transfer, (B) in the case of any transfer pursuant to clause (2) above, such transfer or distribution is being made to a stockholder, partner or member of, or owner of a similar equity interest in, the undersigned and is not a transfer for value, and (C) in the case of any transfer pursuant to clause (3) above, such transfer is being made either (a) in connection with the sale or other bona fide transfer in a single transaction of all or substantially all of the undersigned's capital stock, partnership interests, membership interests or other similar equity interests, as the case may be, or all or substantially all of the undersigned's assets or (b) to another corporation, partnership, limited liability company or other business entity that is an affiliate of the undersigned and such transfer is not for value.

For purposes of this paragraph, "immediate family" shall mean any relationship by blood, marriage or adoption, not more remote than first cousin; "affiliate" shall have the meaning set forth in Rule 405 under the Securities Act; and "change of control" means the consummation of any bona fide third party tender offer, merger, consolidation or other similar transaction the result of which is that any "person" (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, other than the Company, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of more than 50% of total voting power of the voting stock of the Company.

For avoidance of doubt, nothing in this Agreement prohibits the undersigned from exercising any options or warrants to purchase Common Stock, or securities convertible into or exercisable or exchangeable for Common Stock, (which exercises may be effected on a cashless basis with the Company to the extent the instruments representing such options or warrants permit exercises on a cashless basis to pay the exercise price and/or withholding tax and remittance obligations) or receiving shares of Common Stock, or securities convertible into or exercisable or exchangeable for Common Stock, upon the vesting of restricted stock units (including a net withholding of shares by the Company in connection with such vesting to pay the withholding tax and remittance obligations), it being understood that any Common Stock issued upon such exercises or vesting will be subject to the restrictions of this Agreement and provided, however, that no public announcement or filing is voluntarily made regarding such exercise during the Lock-Up Period and provided that if the undersigned is required to file a report under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of such options or warrants or restricted stock units during the Lock-Up Period, the undersigned shall include a statement in such report to the effect that the disposition relates to the exercise of an option or warrant or vesting of restricted stock units, as applicable, and that the shares of Common Stock received upon exercise are subject to the restrictions of this Agreement.

In order to enable this covenant to be enforced, the undersigned hereby consents to the placing of legends or stop transfer instructions with the Company's transfer agent with respect to any Common Stock or securities convertible into or exercisable or exchangeable for Common Stock.

The undersigned further agrees that it will not, during the Lock-Up Period, make any demand or request for or exercise any right with respect to the registration under the Securities Act, of any shares of Common Stock or other Beneficially Owned Shares or any securities convertible into or exercisable or exchangeable for Common Stock or other Beneficially Owned Shares.

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Agreement and that this Agreement has been duly authorized (if the undersigned is not a natural person), executed and delivered by the undersigned and is a valid and binding agreement of the undersigned. This Agreement and all authority herein conferred are irrevocable and shall survive the death or incapacity of the undersigned (if a natural person) and shall be binding upon the heirs, personal representatives, successors and assigns of the undersigned.

This Agreement shall be governed by and construed in accordance with the internal laws of the State of New York applicable to agreements made and to be performed in such state.

If (i) the Securities Purchase Agreement is not executed by October 1, 2021 or (ii) the Securities Purchase Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated for any reason prior to payment for and delivery of any Securities to be sold thereunder, then this Agreement shall immediately be terminated and the undersigned shall automatically be released from all of his, her or its obligations under this Agreement. The undersigned acknowledges and agrees that whether or not the Offering actually occurs depends on a number of factors, including market conditions.

[Signature page follows]

Very truly yours,

(Name of Stockholder - Please Print)

(Signature)

(Name of Signatory if Stockholder is an entity - Please Print)

(Title of Signatory if Stockholder is an entity - Please Print)

Address: _____

EXHIBIT K

LIST OF DIRECTORS AND EXECUTIVE OFFICERS
EXECUTING LOCK-UP AGREEMENTS

Robert Conway
Xiangmin Cui, Ph.D.
Mitchell H. Gold, M.D.
Natasha Hernday
Christopher Peetz
Stanford Peng, M.D., Ph.D.
Paul Rickey
Peter Thompson, M.D.
James N. Topper M.D., Ph.D.
Jay Venkatesan, M.D.
Zelanna Goldberg, M.D.

REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this “*Agreement*”) is made and entered into as of September 14, 2021, by and among Alpine Immune Sciences, Inc., a Delaware corporation (the “*Company*”), and the several purchasers signatory hereto (each a “*Purchaser*” and collectively, the “*Purchasers*”).

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

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Company and each of the Purchasers agree 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. As used in this Agreement, the following terms shall have the following meanings:

“*Advice*” has the meaning set forth in Section 6(d).

“*Agreement*” has the meaning set forth in the Preamble.

“*Company*” has the meaning set forth in the Preamble.

“*Effective Date*” means the date that the Registration Statement filed pursuant to Section 2(a) is first declared effective by the Commission.

“*Effectiveness Deadline*” means, with respect to the Initial Registration Statement or the New Registration Statement, the twenty-fifth (25th) calendar day following the Filing Deadline (or, in the event the Commission reviews and has written comments to the Initial Registration Statement or the New Registration Statement, the ninetieth (90th) calendar day following the Filing Deadline); *provided, however*, that if the Company is notified by the Commission that the Initial Registration Statement or the New Registration Statement will not be reviewed or is no longer subject to further review and comments, the Effectiveness Deadline 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*, that if the Effectiveness Deadline falls on a day that is not a Business Day or any other day that the Commission is closed for business, the Effectiveness Deadline shall be extended to the next Business Day on which the Commission is open for business; *provided, further*, that if the Commission is not available to review or declare effective registration statements as of the Effectiveness Deadline, including because of a “lapse in appropriations” (as described in the Commission’s *Operations Plan Under a Lapse in Appropriations and Government Shutdown*, December 2018, or any similar guidance subsequently published by the Commission), the Effectiveness Deadline shall be the twenty-fifth (25th) calendar day following the date the Commission resumes reviewing and declaring effective registration statements (or, in the event the Commission reviews and has written comments to the Initial Registration Statement or the New Registration Statement, the ninetieth (90th) calendar day following the date the Commission resumes reviewing and declaring effective registration statements).

“*Effectiveness Period*” has the meaning set forth in Section 2(b).

“*Event*” has the meaning set forth in Section 2(c).

“*Event Date*” has the meaning set forth in Section 2(c).

“*Filing Deadline*” means, with respect to the Initial Registration Statement required to be filed pursuant to Section 2(a), November 15, 2021.

“*FINRA*” has the meaning set forth in Section 3(i).

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

“*Indemnified Party*” has the meaning set forth in Section 5(c).

“*Indemnifying Party*” has the meaning set forth in Section 5(c).

“*Initial Registration Statement*” means the initial Registration Statement filed pursuant to Section 2(a) of this Agreement.

“*Liquidated Damages*” has the meaning set forth in Section 2(c).

“*Losses*” has the meaning set forth in Section 5(a).

“*New Registration Statement*” has the meaning set forth in Section 2(a).

“*Prefunded Warrants*” means the Prefunded Warrants issued pursuant to the Purchase Agreement.

“*Prefunded Warrant Shares*” means the shares of Common Stock issued or issuable upon exercise of the Prefunded Warrants.

“*Principal Market*” means the Trading Market on which the Common Stock is primarily listed on and quoted for trading, which, as of the Closing Date, shall be the Nasdaq Global Market.

“*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 under 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 posteffective amendments, and all material incorporated by reference or deemed to be incorporated by reference in such Prospectus.

“*Purchase Agreement*” has the meaning set forth in the Recitals.

“*Purchaser*” or “*Purchasers*” has the meaning set forth in the Preamble.

“*Registrable Securities*” means all of (i) the Shares, (ii) the Prefunded Warrant Shares and (iii) any securities issued or issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect to the foregoing, *provided*, that the Holder has completed and delivered to the Company a Selling Stockholder Questionnaire and any other information regarding the Holder and the distribution of the Registrable Securities as the Company may, from time to time, reasonably request for inclusion in a Registration Statement pursuant to applicable law; and *provided*,

further, that with respect to a particular Holder, such Holder's Shares and Prefunded Warrant Shares shall cease to be Registrable Securities upon the earlier to occur of the following: (A) a sale pursuant to a Registration Statement or Rule 144 under the Securities Act (in which case, only such security sold by the Holder shall cease to be a Registrable Security); and (B) becoming eligible for resale by the Holder under Rule 144 without the requirement for the Company to be in compliance with the current public information required thereunder and without volume or manner-of-sale restrictions, pursuant to a written opinion letter to such effect, addressed, delivered and acceptable to the Transfer Agent.

"Registration Statements" means any one or more registration statements of the Company filed under the Securities Act that covers the resale of any of the Registrable Securities pursuant to the provisions of this Agreement (including without limitation the Initial Registration Statement and the New Registration Statement), amendments and supplements to such Registration Statements, including post-effective amendments, all exhibits and all material incorporated by reference or deemed to be incorporated by reference in such Registration Statements.

"Rule 415" means Rule 415 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

"Rule 424" means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

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

"Selling Stockholder Questionnaire" means a questionnaire in the form attached as Annex B hereto, or such other form of questionnaire as may reasonably be adopted by the Company from time to time.

"Shares" means the shares of Common Stock issued or issuable to the Purchasers pursuant to the Purchase Agreement.

"Trading Day" means (i) a day on which the Common Stock is listed or quoted and traded on its Principal Market (other than the OTC Bulletin Board), or (ii) if the Common Stock is not listed on a Trading Market (other than the OTC Bulletin Board), a day on which the Common Stock is traded in the over-the-counter market, as reported by the OTC Bulletin Board, or (iii) if the Common Stock is not quoted on any Trading Market, a day on which the Common Stock is quoted in the over-the-counter market as reported in the "pink sheets" by Pink Sheets LLC (or any similar organization or agency succeeding to its functions of reporting prices); *provided*, that in the event that the Common Stock is not listed or quoted as set forth in (i), (ii) and (iii) hereof, then Trading Day shall mean a Business Day.

2. Registration.

(a) On or prior to the Filing Deadline, the Company shall prepare and file with the Commission a Registration Statement covering the resale of all of the Registrable Securities not already covered by an existing and effective Registration Statement for an offering to be made on a continuous basis pursuant to Rule 415 or, if Rule 415 is not available for offers and sales of the Registrable Securities, by such other means of distribution of Registrable Securities as the Holders may reasonably specify (the "Initial Registration Statement"). The Initial Registration Statement shall be on Form S-3

(except if the Company is then ineligible to register for resale all of the Registrable Securities on Form S-3, in which case such registration shall be on such other form available to register for resale the Registrable Securities as a secondary offering) subject to the provisions of Section 2(e) and shall contain (except if otherwise required pursuant to written comments received from the Commission upon a review of such Registration Statement) the “Plan of Distribution” section attached hereto as Annex A (which may be modified to respond to comments, if any, provided by the Commission). Notwithstanding the registration obligations set forth in this Section 2, if the Company subsequently determines that all of the Registrable Securities can be registered for resale as a secondary offering on a single registration statement, the Company agrees to promptly (i) inform each of the Holders thereof and use its commercially reasonable efforts to file amendments to the Initial Registration Statement as required by the Commission and/or (ii) withdraw the Initial Registration Statement and file a new registration statement (a “*New Registration Statement*”), in either case covering the Registrable Securities on Form S-3.

(b) The Company shall use its commercially reasonable efforts to cause each Registration Statement to be declared effective by the Commission as soon as practicable and, with respect to the Initial Registration Statement or the New Registration Statement, as applicable, no later than the Effectiveness Deadline (including filing with the Commission a request for acceleration of effectiveness in accordance with Rule 461 promulgated under the Securities Act), and shall use its commercially reasonable efforts to keep each Registration Statement continuously effective under the Securities Act until the earlier of (i) such time as all of the Registrable Securities covered by such Registration Statement have been publicly sold by the Holders, (ii) the date that all (A) the Shares, (B) the Prefunded Warrant Shares and (C) any securities issued or issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect to the foregoing cease to be Registrable Securities and (iii) the second anniversary of the Closing Date (provided that as to each Purchaser, such two-year period will be extended for a period of time equal to the period such Purchaser is required to suspend sales of such Registrable Securities pursuant to the terms of this Agreement) (the “*Effectiveness Period*”). The Company shall telephonically request effectiveness of a Registration Statement as of 5:00 P.M. New York City time on a Trading Day. The Company shall promptly notify the Holders via facsimile or electronic mail of a “.pdf” format data file of the effectiveness of a Registration Statement on the same Trading Day that the Company telephonically confirms effectiveness with the Commission, which date of confirmation shall initially be the date requested for effectiveness of such Registration Statement. The Company shall, by 9:30 A.M. New York City time on the first Trading Day after the Effective Date, file a final Prospectus with the Commission, as required by Rule 424(b). Failure to so notify the Holders on or before the second Trading Day after such notification of effectiveness or failure to file a final Prospectus as aforesaid shall be deemed an Event under Section 2(c).

(c) Subject to the provisions of Section 3(a), 3(h) and 3(i), if: (i) the Initial Registration Statement is not filed with the Commission on or prior to the Filing Deadline, (ii) the Initial Registration Statement or the New Registration Statement, as applicable, is not declared effective by the Commission (or otherwise does not become effective) for any reason on or prior to the Effectiveness Deadline or (iii) after its Effective Date, (A) such Registration Statement ceases for any reason (including without limitation by reason of a stop order, or the Company’s failure to update the Registration Statement), to remain continuously effective as to all Registrable Securities included in such Registration Statement or (B) the Holders are not permitted to utilize the Prospectus therein to resell such Registrable Securities for any reason for more than an aggregate of thirty (30) consecutive calendar days (or forty-five (45) consecutive calendar days if the Company receives comments on its Annual Report on Form 10-K for the year ended December 31, 2021 or to the Registration Statement amended by such annual report) or sixty (60) calendar days (which need not be consecutive days) during any twelve (12) month period, or

(iv) the Company fails to satisfy the current public information requirement pursuant to Rule 144(c)(1) as a result of which the Holders who are not affiliates are unable to sell Registrable Securities without restriction under Rule 144 (or any successor thereto), (any such failure or breach in clauses (i) through (iv) above being referred to as an “Event,” and, for purposes of clauses (i), (ii) or (iv), the date on which such Event occurs, or for purposes of clause (iii), the date on which such thirty (30), forty-five (45) or sixty (60) calendar day period is exceeded, being referred to as an “Event Date”), then, on each such Event Date and on each monthly anniversary of each such Event Date (if the applicable Event shall not have been cured by such date) until the earlier of (1) the applicable Event is cured or (2) the Registrable Securities are eligible for resale pursuant to Rule 144 without manner of sale or volume restrictions, the Company shall pay to each Holder an amount in cash, as liquidated damages and not as a penalty (“Liquidated Damages”), equal to one percent (1.0%) of the aggregate purchase price paid by such Holder pursuant to the Purchase Agreement for any unregistered Registrable Securities then held by such Holder (which remedy shall be exclusive of any other remedies available under this Agreement or under applicable law). The parties agree that (1) the Company will not be liable for Liquidated Damages under this Agreement with respect to any Prefunded Warrants or Prefunded Warrant Shares (prior to their issuance), (2) notwithstanding anything to the contrary herein or in the Purchase Agreement, no Liquidated Damages shall be payable with respect to any period after the expiration of the Effectiveness Period, (it being understood that this sentence shall not relieve the Company of any Liquidated Damages accruing prior to the Effectiveness Deadline) and in no event shall, the aggregate amount of Liquidated Damages payable to a Holder exceed, in the aggregate, ten percent (10%) of the aggregate purchase price paid by such Holder pursuant to the Purchase Agreement and (3) in no event shall the Company be liable in any thirty (30) day period for Liquidated Damages under this Agreement in excess of one percent (1.0%) of the aggregate purchase price paid by the Holders pursuant to the Purchase Agreement. If the Company fails to pay any Liquidated Damages pursuant to this Section 2(c) in full within ten (10) Business Days after the date payable, the Company will pay simple interest thereon at a rate of one percent (1%) per month (or such lesser maximum amount that is permitted to be paid by applicable law) to the Holder, accruing daily from the date such Liquidated Damages are due until such amounts, plus all such interest thereon, such interest not to exceed ten percent (10%) in the aggregate in any twelve-month period, are paid in full. The Liquidated Damages pursuant to the terms hereof shall apply on a daily pro-rata basis for any portion of a month prior to the cure of an Event, except in the case of the first Event Date. The Effectiveness Deadline for a Registration Statement shall be extended without default or Liquidated Damages hereunder in the event that the Company’s failure to obtain the effectiveness of the Registration Statement on a timely basis results from the failure of a Holder to timely provide the Company with information requested by the Company and necessary to complete the Registration Statement in accordance with the requirements of the Securities Act (in which the Effectiveness Deadline would be extended with respect to Registrable Securities held by such Holder).

(d) At least ten (10) Trading Days prior to the first anticipated filing date of a Registration Statement for any registration under this Agreement, the Company will notify each Holder of the information the Company requires from that Holder other than the information contained in the Selling Stockholder Questionnaire, if any, which shall be completed and delivered to the Company promptly upon request and, in any event, within three (3) Trading Days prior to the applicable anticipated filing date. Each Holder further agrees that it shall not be entitled to be named as a selling securityholder in the Registration Statement or use the Prospectus for offers and resales of Registrable Securities at any time, unless such Holder has returned to the Company a completed and signed Selling Stockholder Questionnaire and a response to any requests for further information as described in the previous sentence. If a Holder of Registrable Securities returns a Selling Stockholder Questionnaire or a request for further information, in either case, after its respective deadline, the Company shall use its commercially reasonable efforts to take such actions as are required to name such Holder as a selling security holder in

the Registration Statement or any pre-effective or post-effective amendment thereto and to include (to the extent not theretofore included) in the Registration Statement the Registrable Securities identified in such late Selling Stockholder Questionnaire or request for further information; provided however, that the Company shall not be obligated to file more than one post-effective amendment or supplement in any sixty (60) day period following the date of such Registration Statement is declared effective for the purposes of naming Holders as selling security holders who are not named in such Registration Statement at the time of effectiveness. Each Holder acknowledges and agrees that the information in the Selling Stockholder Questionnaire or request for further information as described in this Section 2(d) will be used by the Company in the preparation of the Registration Statement and hereby consents to the inclusion of such information in the Registration Statement.

(e) In the event that Form S-3 is not available for the registration of the resale of all of the Registrable Securities hereunder, the Company shall (i) register the resale of the Registrable Securities on another appropriate form reasonably acceptable to the Holders and (ii) undertake to register the Registrable Securities on Form S-3 promptly 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 two (2) 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 (except for (x) Annual Reports on Form 10-K (including portions of the Company's Proxy Statement for its Annual Meeting of Stockholders to the extent specifically incorporated by reference into such Annual Reports on Form 10-K), Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and any similar or successor reports or any prospectus supplement the substance of which is limited to any of the foregoing filings, (y) any amendment or supplement that does not pertain to or otherwise change the disclosure regarding the "Plan of Distribution" or the Holders as "Selling Stockholders" or (z) any amendment filed for purposes of effecting the deregistration of the Securities following the expiration of the Effectiveness Period), (i) furnish to the Holder copies of such Registration Statement, Prospectus or amendment or supplement thereto, as proposed to be filed, which documents will be subject to the review of such Holder (it being acknowledged and agreed that if a Holder does not object to or comment on the aforementioned documents within such two (2) Trading Day or one (1) Trading Day period, as the case may be, then the Holder shall be deemed to have consented to and approved the use of such documents) and (ii) use commercially reasonable efforts to 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 any Registration Statement or amendment or supplement thereto in a form to which a Holder reasonably objects in good faith, provided that, the Company is notified of such objection in writing within the two (2) Trading Day or one (1) Trading Day period described above, as applicable, and for such period as the Company and such Holder are attempting in good faith to resolve the objection of such Holder, any time period or deadline for purposes of Section 2(c) shall be extended for such period and no Liquidated Damages shall accrue or be payable for such period.

(b) (i) Prepare and file with the Commission such amendments (including post-effective amendments) and supplements, to each Registration Statement and the Prospectus used in connection therewith as may be necessary to keep such Registration Statement continuously effective as to the applicable Registrable Securities for its Effectiveness Period; (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 practicable to any comments received from the Commission with respect to each Registration Statement or any amendment thereto and, as promptly as reasonably possible, provide the Holders true and complete copies of all correspondence from and to the Commission relating to such Registration Statement that pertains to the Holders as “Selling Stockholders” but not any other comments or comments that would result in the disclosure to the Holders of material and non-public information concerning the Company; and (iv) comply with the 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 Effectiveness Period (subject to the terms of this Agreement) in accordance with the intended methods of disposition by the Holders thereof as set forth in such Registration Statement as so amended or in such Prospectus as so supplemented; *provided, however*, that each Holder shall be responsible for the delivery of the Prospectus to the Persons to whom such Holder sells any of the Shares or the Prefunded Warrant Shares (including in accordance with Rule 172 under the Securities Act), and each Holder agrees to dispose of Registrable Securities in compliance with the “Plan of Distribution” described in the Registration Statement and otherwise in compliance with applicable federal and state securities laws. In the case of amendments and supplements to a Registration Statement which are required to be filed pursuant to this Agreement (including pursuant to this [Section 3\(b\)](#)) by reason of the Company filing a report on Form 10-K, Form 10-Q or Form 8-K or any analogous report under the Exchange Act, the Company shall have incorporated such report by reference into such Registration Statement, if applicable, or shall file such amendments or supplements with the Commission on the same day on which the Exchange Act report which created the requirement for the Company to amend or supplement such Registration Statement was filed.

(c) Notify the Holders (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 practicable (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 any Registration Statement (in which case the Company shall provide to each of the Holders true and complete copies of all comments that pertain to the Holders as a “Selling Stockholder” or to the “Plan of Distribution” and all written responses thereto, but not any other comments or responses or information that the Company believes would constitute material and non-public information); and (C) with respect to each 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 that pertains to the Holders as “Selling Stockholders” or the “Plan of Distribution”; (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 such 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 such Registration Statement, Prospectus or other documents so that, in the case of such 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 the case of any Prospectus, form of prospectus or supplement thereto, 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* that, any and all such information shall remain confidential to each Holder until such information otherwise becomes public, unless disclosure by a Holder is required by law; and *provided, further*, that notwithstanding each Holder's agreement to keep such information confidential, each such Holder makes no acknowledgement that any such information is material, non-public information.

(d) Use commercially reasonable efforts to avoid the issuance of, or, if issued, obtain the withdrawal of (i) any order 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, as soon as practicable.

(e) If requested by a Holder, furnish to such Holder, without charge, at least one conformed copy of each Registration Statement and each amendment thereto 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 the Company shall have no obligation to provide any document pursuant to this clause that is available on the Commission's EDGAR system; *provided further*, that the Company shall have no obligation to provide an unredacted form of any exhibit if the Company has filed or intends to file with the Commission for which confidential treatment is sought with respect to such exhibit.

(f) 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.

(g) If requested by a Holder, cooperate with such Holder and use commercially reasonable efforts to facilitate the preparation and delivery of certificates representing Registrable Securities to be delivered to a transferee pursuant to the Registration Statement as soon as reasonably practicable, which certificates shall be free, to the extent permitted by the Purchase Agreement, the Prefunded Warrants and under applicable law, of all restrictive legends, and to enable such Registrable Securities to be in such denominations and registered in such names as any such Holders may reasonably request.

(h) Following the occurrence of any event contemplated by Section 3(c), as promptly as reasonably practicable (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 the affected Registration Statements 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, no Registration Statement nor any 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 the case of any Prospectus, form of prospectus or supplement thereto, 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(c) 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(h) to suspend the availability of a Registration Statement and Prospectus, subject to the payment of partial Liquidated Damages otherwise required pursuant to Section 2(c), for periods not to exceed the time periods set forth in Section 2(c)(iii).

(i) The Company may require each selling Holder to furnish to the Company a certified statement as to (i) the number of shares of Common Stock beneficially owned by such Holder and any Affiliate thereof, (ii) any Financial Industry Regulatory Authority ("FINRA") affiliations, (iii) any natural persons who have the power to vote or dispose of the common stock and (iv) any other information as may be requested by the Commission, FINRA or any state securities commission. During any periods that the Company is unable to meet its obligations hereunder with respect to the registration of Registrable Securities because any Holder fails to furnish such information within three (3) Trading Days of the Company's request, any Liquidated Damages that are accruing at such time as to such Holder only shall be tolled and any Event that may otherwise occur solely because of such delay shall be suspended as to such Holder only, until such information is delivered to the Company.

4. Registration Expenses. All fees and expenses incident to the Company's performance of or compliance with its obligations under this Agreement (excluding any underwriting discounts and selling commissions and all legal fees and expenses of legal counsel for any Holder) 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 (A) with respect to filings required to be made with any Trading Market on which the Common Stock is then listed for trading and (B) with respect to compliance with applicable state securities or Blue Sky laws (including, without limitation, fees and disbursements of counsel for the Company in connection with Blue Sky qualifications or exemptions of the Registrable Securities and determination of the eligibility of the Registrable Securities for investment under the laws of such jurisdictions as requested by the Holders), (ii) printing expenses (including, without limitation, expenses of printing certificates for Registrable Securities and of printing prospectuses if the printing of prospectuses is reasonably requested by the Holders of a majority of the Registrable Securities included in the Registration Statement), (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 underwriting, broker or similar fees or 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, defend and hold harmless each Holder, the officers, directors, agents, partners, members, managers, stockholders, Affiliates and employees 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, partners, members, managers, stockholders, agents and employees 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 costs of preparation and investigation and reasonable attorneys' fees) and expenses (collectively, "Losses"), as incurred, that arise out of or are based upon (i) any untrue or alleged untrue statement of a material fact contained in any 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 to state a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or form of prospectus or supplement thereto, in light of the circumstances under which they were made) not misleading, or (ii) any violation or alleged violation by the Company of the Securities Act, 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 (A) such untrue statements, alleged untrue statements, omissions or alleged omissions are based solely upon information relating to such Holder or such Holder's proposed method of distribution of Registrable Securities and was reviewed and approved in writing by such Holder expressly for use in the Registration Statement, such Prospectus or such form of Prospectus or in any amendment or supplement thereto (it being understood that each Holder has approved Annex A hereto for this purpose) or (B) in the case of an occurrence of an event of the type specified in Section 3(c)(iii)-(vi), related to the use by a Holder of an outdated or defective Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated or defective and prior to the receipt by such Holder of the Advice contemplated and defined in Section 6(d) below, to the extent that following the receipt of the Advice the misstatement or omission giving rise to such Loss would have been corrected or (C) to the extent that any such Losses arise out of the Holder's (or any other indemnified Person's) failure to send or give a copy of the Prospectus or supplement (as then amended or supplemented), if required, pursuant to Rule 172 under the Securities Act (or any successor rule) to the Persons asserting an untrue statement or alleged untrue statement or alleged untrue statement or omission or alleged omission at or prior to the written confirmation of the sale of Registrable Securities to such Person if such statement or omission was corrected in such Prospectus or supplement. 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 an Indemnified Party (as defined in Section 5(c)) and shall survive the transfer of the Registrable Securities by the Holders.

(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, arising out of or are based solely upon any untrue or alleged untrue statement of a material fact contained in any 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 any form of prospectus or supplement thereto, in light of the circumstances under which they were made) not misleading (i) to the extent that 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 (ii) 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 approved in writing by such Holder expressly for use in a Registration Statement (it being understood that the Holder has approved Annex A hereto for this purpose), such Prospectus or such form of Prospectus or in any amendment or supplement thereto or (iii) in the case of an occurrence of an event of the type specified in Section 3(c)(iii)-(vi), to the extent related to the use by such Holder of an outdated or defective Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated or defective and prior to the receipt by such Holder of the Advice contemplated in Section 6(d). In no event shall the liability of any selling Holder hereunder be greater in amount than the dollar amount of the net proceeds received by such Holder upon the sale of the Registrable Securities 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 reasonable 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 such Indemnified Party shall have been advised by counsel that a conflict of interest exists 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 such counsel shall be at the expense of the Indemnifying Party); *provided*, that the Indemnifying Party shall not be liable for the fees and expenses of more than one separate firm of attorneys at any time for all Indemnified Parties. 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, delayed or conditioned. 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 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 5) shall be paid to the Indemnified Party, quarterly in arrears as they are incurred following 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 judicially determined to not be entitled to indemnification hereunder). The failure to deliver written notice to the Indemnifying Party within a reasonable time of the commencement of any such action shall not relieve such Indemnifying Party of any liability to the Indemnified Party under this Section 5, except to the extent that the Indemnifying Party is materially and adversely prejudiced in its ability to defend such action.

(d) Contribution. If a claim for 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, in lieu of indemnifying such Indemnified Party, shall contribute to the amount paid or payable by such Indemnified Party as a result of such Losses, 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 reasonable 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 5 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. Notwithstanding the provisions of this Section 5(d), (A) no Holder shall be required to contribute, in the aggregate, any amount in excess of the amount by which the net proceeds actually received by such Holder from the sale of the Registrable Securities subject to the Proceeding exceeds the amount of any damages that such Holder has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission and (B) no contribution will be made under circumstances where the maker of such contribution would not have been required to indemnify the Indemnified Party under the fault standards set forth in this Section 5. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation.

The indemnity and contribution agreements contained in this Section 5 are in addition to any liability that the Indemnifying Parties may have to the Indemnified Parties and are not in diminution or limitation of the indemnification provisions under the Purchase Agreement.

6. Miscellaneous.

(a) Remedies. In the event of a breach by the Company or by a Holder of any of their 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, will be entitled to specific performance of its rights under this Agreement. The Company and each Holder agree 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 waive the defense that a remedy at law would be adequate.

(b) No Piggyback on Registrations; Prohibition on Filing Other Registration Statements. Except and to the extent specified in a disclosure schedule to the Purchase Agreement, neither the Company nor any of its security holders (other than the Holders in such capacity pursuant hereto) may include securities of the Company in a Registration Statement other than the Registrable Securities and the Company shall not prior to the Effective Date enter into any agreement providing any such right to any of its security holders. The Company shall not file with the Commission a registration statement relating to an offering for its own account under the Securities Act of any of its equity securities other than a registration statement on Form S-8 or, in connection with an acquisition, on Form S-4 until the earlier of (i) the date that is thirty (30) days after the Initial Registration Statement or New Registration Statement, as the case may be, is declared effective and (ii) the date that all Registrable Securities are eligible for resale by non-affiliates without volume or manner of sale restrictions under Rule 144 and without the requirement for the Company to be in compliance with the current public information requirements under Rule 144. For the avoidance of doubt, the Company shall not be prohibited from preparing and filing with the Commission a registration statement relating to an offering of Common Stock by existing stockholders of the Company under the Securities Act pursuant to the terms of registration rights held by such stockholder or from filing amendments to registration statements filed prior to the date of this Agreement.

(c) Compliance. Each Holder covenants and agrees that it will comply with the prospectus delivery requirements of the Securities Act as applicable to it (unless an exemption therefrom is available) in connection with sales of Registrable Securities pursuant to the Registration Statement and shall sell the Registrable Securities only in accordance with a method of distribution described in the Registration Statement

(d) 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(c)(iii)-(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. The Company agrees and acknowledges that any periods during which the Holder is required to discontinue to the disposition of the Registrable Securities hereunder shall be subject to the provisions of Section 2(c).

(e) 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 hereof, 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.

(f) Amendments and Waivers. The provisions of this Agreement, including the provisions of this sentence, may not be amended, modified or supplemented, or waived unless the same shall be in writing and signed by the Company and Holders holding no less than a majority of the then outstanding Registrable Securities, provided that any party may give a waiver as to itself. 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 Holders and that does not directly or indirectly affect the rights of other Holders may be given by 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 immediately preceding sentence.

(g) 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.

(h) 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. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations, or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. The Company may not assign its rights (except in connection with a Fundamental Transaction (as defined in the Prefunded Warrants)) or obligations hereunder without the prior written consent of all the Holders of the then outstanding Registrable Securities. Each Holder may assign its respective rights hereunder in the manner and to the Persons as permitted under the Purchase Agreement; provided in each case that (i) the Holder agrees in writing with the transferee or assignee to assign such rights and related obligations under this Agreement, and for the transferee or assignee to assume such obligations, and a copy of such agreement is furnished to the Company promptly, and in any event within three Business Days after such assignment, (ii) the Company is promptly, and in any event within three Business Days after such transfer or assignment, furnished with written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being transferred or assigned, (iii) at or before the time of the effectiveness of such transfer or assignment, the transferee or assignee agrees in writing with the Company to be bound by all of the provisions contained herein and (iv) the transferee is an “accredited investor,” as that term is defined in Rule 501 of Regulation D.

(i) Execution and Counterparts. This Agreement may be executed in two or more counterparts, each of which when so executed shall be deemed to be an original and, all of which taken together shall constitute 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 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 were the original thereof.

(j) 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.

(k) Cumulative Remedies. Except as provided herein, the remedies provided herein are cumulative and not exclusive of any other remedies provided by law.

(l) 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 good faith 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.

(m) Headings. The headings in this Agreement are for convenience only and shall not limit or otherwise affect the meaning hereof.

(n) Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under this Agreement are several and not joint with the obligations of any other Purchaser hereunder, and no Purchaser shall be responsible in any way for the performance of the obligations of any other Purchaser hereunder. The decision of each Purchaser to purchase the Securities pursuant to the Transaction Documents has been made independently of any other Purchaser. Nothing contained herein or in any other agreement or document delivered at any Closing, and no action taken by any Purchaser pursuant hereto or thereto, shall be deemed to constitute the Purchasers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert with respect to such obligations or the transactions contemplated by this Agreement. Each Purchaser acknowledges that no other Purchaser has acted as agent for such Purchaser in connection with making its investment hereunder and that no Purchaser will be acting as agent of such Purchaser in connection with monitoring its investment in the Securities or enforcing its rights under the Transaction Documents. Each Purchaser 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 Purchaser to be joined as an additional party in any Proceeding for such purpose. The Company acknowledges that each of the Purchasers has been provided with the same Registration Rights Agreement for the purpose of closing a transaction with multiple Purchasers and not because it was required or requested to do so by any Purchaser.

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

ALPINE IMMUNE SCIENCES, INC.

By: /s/ Paul Rickey

Name: Paul Rickey

Title: Senior Vice President and Chief Financial Officer

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[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Frazier Life Sciences Public Fund, L.P.

By: FHMLSP, L.P.
Its general partner

By: FHMLSP, L.L.C.
Its general partner

By: /s/ Albert Cha

Name: Albert Cha

Title: Managing Director

ADDRESS FOR NOTICE

Frazier Life Sciences Public Fund, L.P.

Attn: Albert Cha

70 Willow Rd, Suite 200

Menlo Park, CA 94025

With a copy to:

Frazier Life Sciences Public Fund, L.P.

Attn: Chief Financial Officer

Two Union Square

601 Union St., Suite 3200

Seattle, WA 98101

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Decheng Capital China Life Sciences USD Fund III, L.P.

AUTHORIZED SIGNATORY

By: /s/ Xiangmin Cui

Name: Xiangmin Cui

Title: Manager

ADDRESS FOR NOTICE

c/o: Decheng Capital Management III (Cayman), LLC

Street: 3000 Sand Hill Road, Building 2, Suite 110

City/State/Zip: Menlo Park, California 94025

Attention: Peter Colabuono

Tel: _____

Fax: _____

Email: _____

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Biotechnology Value Trading Fund OS LP

AUTHORIZED SIGNATORY

By: /s/ Mark Lampert

Name: Mark Lampert

President of BVF, Inc., General Partner of BVF Partners LP, Sole
Member of BVF Partners OS Ltd., General Partner of

Title: Biotechnology Value Trading Fund OS LP

ADDRESS FOR NOTICE

c/o: BVF Partners, L.P.

Street: 44 Montgomery St, 40th Floor

City/State/Zip: San Francisco, CA 94104

Attention: James Kratky

Tel: _____

Fax: _____

Email: _____

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Biotechnology Value Fund, L.P.

AUTHORIZED SIGNATORY

By: /s/ Mark Lampert

Name: Mark Lampert

Chief Executive Officer of BVF I GP LLC, General Partner of

Title: Biotechnology Value Fund, L.P.

ADDRESS FOR NOTICE

c/o: BVF Partners, L.P.

Street: 44 Montgomery St, 40th Floor

City/State/Zip: San Francisco, CA 94104

Attention: James Kratky

Tel: _____

Fax: _____

Email: _____

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Biotechnology Value Fund II, L.P.

AUTHORIZED SIGNATORY

By: /s/ Mark Lampert

Name: Mark Lampert

Chief Executive Officer of BVF II GP LLC, General Partner of
Title: Biotechnology Value Fund II, L.P.

ADDRESS FOR NOTICE

c/o: BVF Partners, L.P.

Street: 44 Montgomery St, 40th Floor

City/State/Zip: San Francisco, CA 94104

Attention: James Kratky

Tel: _____

Fax: _____

Email: _____

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

MSI BVF SPV LLC

AUTHORIZED SIGNATORY

By: /s/ Mark Lampert

Name: Mark Lampert

President of BVF Inc., General Partner of BVF Partners LP,

Title: Attorney in Fact of MSI BVF SPV LLC

ADDRESS FOR NOTICE

c/o: BVF Partners, L.P.

Street: 44 Montgomery St, 40th Floor

City/State/Zip: San Francisco, CA 94104

Attention: James Kratky

Tel: _____

Fax: _____

Email: _____

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

TCG CROSSOVER FUND I, L.P.

By: TCG Crossover GP I, LLC, its General Partner

AUTHORIZED SIGNATORY

By: /s/ Chen Yu

Name: Chen Yu

Title: Managing Member

ADDRESS FOR NOTICE

c/o: Jaime Felix

Street: 228 Hamilton Avenue, 3rd Floor

City/State/Zip: Palo Alto, CA 94403

Attention:

Tel:

Fax:

Email:

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

OMEGA FUND VI, L.P.

By: Omega Fund VI GP, L.P., its General Partner

By: Omega Fund VI GP Manager, Ltd., its General Partner

By: /s/ Otello Stampacchia

Name: Otello Stampacchia

Title: Director

ADDRESS FOR NOTICE

c/o: Omega Fund Management

Street: 888 Boylston Street, Suite 1111

City/State/Zip: Boston, MA 02199

Attention: Deirdre Cunnane

Tel:

Fax:

Email:

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Avidity Master Fund LP

AUTHORIZED SIGNATORY

By: /s/ Michael Gregory

Name: Michael Gregory

Title: Managing Member

ADDRESS FOR NOTICE

c/o: Avidity Partners Management LP

Street: 2828 N. Harwood Street, Suite 1220

City/State/Zip: Dallas, TX 85201

Attention: Michael Gregory; Andrew So

Tel:

Fax:

Email:

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Avidity Capital Fund II LP

AUTHORIZED SIGNATORY

By: /s/ Michael Gregory

Name: Michael Gregory

Title: Managing Member

ADDRESS FOR NOTICE

c/o: Avidity Partners Management LP

Street: 2828 N. Harwood Street, Suite 1220

City/State/Zip: Dallas, TX 85201

Attention: Michael Gregory; Andrew So

Tel:

Fax:

Email:

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Avidity Capital HL Sub Fund III LLC

AUTHORIZED SIGNATORY

By: /s/ Michael Gregory

Name: Michael Gregory

Title: Managing Member

ADDRESS FOR NOTICE

c/o: Avidity Partners Management LP

Street: 2828 N. Harwood Street, Suite 1220

City/State/Zip: Dallas, TX 85201

Attention: Michael Gregory; Andrew So

Tel:

Fax:

Email:

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

667, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to 667, L.P., pursuant to authority granted to it by Baker Biotech Capital, L.P., general partner to 667, L.P., and not as the general partner

AUTHORIZED SIGNATORY

By: /s/ Scott Lessing

Name: Scott Lessing

Title: President

ADDRESS FOR NOTICE

c/o: BAKER BROS. ADVISORS LP

Street: 860 WASHINGTON STREET 3RD FLOOR

City/State/Zip: NEW YORK, NY 10014

Attention: SCOTT LESSING

Tel:

Fax:

Email:

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

BAKER BROTHERS LIFE SCIENCES, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to Baker Brothers Life Sciences, L.P., pursuant to authority granted to it by Baker Brothers Life Sciences Capital, L.P., general partner to Baker Brothers Life Sciences, L.P., and not as the general partner

AUTHORIZED SIGNATORY

By: /s/ Scott Lessing

Name: Scott Lessing

Title: President

ADDRESS FOR NOTICE

c/o: BAKER BROS. ADVISORS LP

Street: 860 WASHINGTON STREET 3RD FLOOR

City/State/Zip: NEW YORK, NY 10014

Attention: SCOTT LESSING

Tel:

Fax:

Email:

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

OrbiMed Private Investments VI, LP

By: OrbiMed Capital GP VI LLC, its General Partner

By: OrbiMed Advisors LLC, its Managing Member

By: /s/ Carl Gordon

Name: Carl Gordon

Title: Managing Member

NAME OF INVESTING ENTITY

OrbiMed Genesis Master Fund, L.P.

By: OrbiMed Genesis GP LLC, its General Partner

By: OrbiMed Advisors LLC, its Managing Member

By: /s/ Carl Gordon

Name: Carl Gordon

Title: Managing Member

ADDRESSES FOR NOTICE

ATTN: General Counsel

Street: 601 Lexington Avenue, 54th Floor

City/State/Zip: New York, NY 10022

Tel:

Email:

[Signature Page to Registration Rights Agreement]

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

NAME OF INVESTING ENTITY

Logos Global Master Fund, LP

AUTHORIZED SIGNATORY

By: /s/ Arsani William

Name: Arsani William

Title: Managing Partner

ADDRESS FOR NOTICE

c/o: Logos Capital

Street: 1 Letterman Dr, Ste D3-700

City/State/Zip: San Francisco, CA 94129

Attention: Virginia Yee

Tel:

Fax:

Email:

[Signature Page to Registration Rights Agreement]

PLAN OF DISTRIBUTION

We are registering the shares of Common Stock issued to the selling stockholders and issuable upon exercise of the prefunded warrants issued to the selling stockholders to permit the resale of these shares of Common Stock by the holders of the shares of Common Stock and prefunded warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of Common Stock. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock.

The selling stockholders may sell all or a portion of the shares of Common Stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions. The shares of Common Stock may be sold on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions. The selling stockholders may use any one or more of the following methods when selling shares:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares 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 entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether such options are listed on an options exchange or otherwise;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, as permitted by that rule, or Section 4(1) under the

Securities Act, if available, rather than under this prospectus, provided that they meet the criteria and conform to the requirements of those provisions.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. If the selling stockholders effect such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440.

In connection with sales of the shares of Common Stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares of Common Stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of Common Stock short and if such short sale shall take place after the date that this Registration Statement is declared effective by the Commission, the selling stockholders may deliver shares of Common Stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the selling stockholders have been advised that they may not use shares registered on this registration statement to cover short sales of our common stock made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the SEC.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the prefunded warrants or shares of Common Stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of Common Stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of Common Stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealer or agents participating in the distribution of the shares of Common Stock may be deemed to be "underwriters" within the meaning of Section 2(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling Stockholders who are "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the applicable prospectus delivery requirements of the Securities Act including Rule 172 thereunder and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Each selling stockholder has informed the Company that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the Common Stock. Upon the Company being notified in writing by a selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of each such selling stockholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such the shares of Common Stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction. In no event shall any broker-dealer receive fees, commissions and markups, which, in the aggregate, would exceed eight percent (8.0%).

Under the securities laws of some states, the shares of Common Stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of Common Stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of Common Stock registered pursuant to the registration statement, of which this prospectus forms a part.

Each selling stockholder and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of Common Stock by the selling stockholder and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the shares of Common Stock to engage in market-making activities with respect to the shares of Common Stock. All of the foregoing may affect the marketability of the shares of Common Stock and the ability of any person or entity to engage in market-making activities with respect to the shares of Common Stock.

We will pay all expenses of the registration of the shares of Common Stock pursuant to the registration rights agreement, including, without limitation, Securities and Exchange Commission filing fees and expenses of compliance with state securities or "blue sky" laws; *provided, however*, that each selling stockholder will pay all underwriting discounts and selling commissions, if any and any related legal expenses incurred by it. We will indemnify the selling stockholders against certain liabilities, including some liabilities under the Securities Act, in accordance with the registration rights agreement, or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus, in accordance with the related registration rights agreements, or we may be entitled to contribution.

SELLING STOCKHOLDER NOTICE AND QUESTIONNAIRE

The undersigned holder of shares of the common stock, par value \$0.001 per share of Alpine Immune Sciences, Inc. (the “*Company*”) issued pursuant to a certain Securities Purchase Agreement by and among the Company and the Purchasers named therein, dated as of September 14, 2021 (the “*Agreement*”), understands that the Company intends to file with the Securities and Exchange Commission a registration statement on Form S-3 (the “*Resale Registration Statement*”) for the registration and the 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 Agreement and the Registration Rights Agreement by and among the Company and the Purchasers named therein, dated as of September 14, 2021 (the “*Registration Rights Agreement*”). All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Agreement.

In order to sell or otherwise dispose of any Registrable Securities pursuant to the Resale Registration Statement, a holder of Registrable Securities generally will be required to be named as a selling stockholder in the related prospectus or a supplement thereto (as so supplemented, the “*Prospectus*”), deliver the Prospectus to purchasers of Registrable Securities (including pursuant to Rule 172 under the Securities Act) and be bound by the provisions of the Registration Rights Agreement (including certain indemnification provisions, as described below). Holders must complete and deliver this Notice and Questionnaire in order to be named as selling stockholders in the Prospectus. **Holders of Registrable Securities who do not complete, execute and return this Notice and Questionnaire within three (3) Trading Days following the date of the Registration Rights Agreement (1) will not be named as selling stockholders in the Resale Registration Statement or the Prospectus and (2) may not use the Prospectus for resales of Registrable Securities.**

Certain legal consequences arise from being named as a selling stockholder in the Resale Registration Statement and the Prospectus. Holders of Registrable Securities are advised to consult their own securities law counsel regarding the consequences of being named or not named as a selling stockholder in the Resale Registration Statement and the Prospectus.

NOTICE

The undersigned holder (the “*Selling Stockholder*”) of Registrable Securities hereby gives notice to the Company of its intention to sell or otherwise dispose of Registrable Securities owned by it and listed below in Item (3), unless otherwise specified in Item (3), pursuant to the Resale Registration Statement. The undersigned, by signing and returning this Notice and Questionnaire, understands and agrees that it will be bound by the terms and conditions of this Notice and Questionnaire, the Agreement and the Registration Rights Agreement.

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

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 Listed in Item 3 below 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 the questionnaire):

(d) Relationship of Natural Control Person to Selling Stockholder or Registered Holder (if different):

2. Address for Notices to Selling Stockholder:

Telephone:

Fax:

Contact Person:

E-mail address of Contact Person: _____

3. Beneficial Ownership of Registrable Securities Issuable Pursuant to the Agreement:

(a) Type and Number of Registrable Securities beneficially owned and issued pursuant to the Agreement:

(b) Specify the number of shares of Registrable Securities to be registered pursuant to this Notice for resale:

4. Broker-Dealer Status:

(a) Are you a broker-dealer?

Yes

No

If “yes” to Section 4(a), did you receive your Registrable Securities as compensation for investment banking services to the Company?

Yes

No

Note: If no, 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

Note: If yes, provide a narrative explanation below:

(d) If you are an affiliate of a broker-dealer, do you certify that you bought 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, the Commission’s staff has indicated that you should be identified as an underwriter in the Registration Statement.

5. Beneficial Ownership of Other Securities of the Company Owned by the Selling Stockholder.

Except as set forth below in this Item 5, the undersigned is not the beneficial or registered owner of any securities of the Company other than the Registrable Securities listed above in Item 3 and the undersigned does not have the right to acquire any securities of the Company within 60 days after the date of this Notice through the exercise of options, warrants or otherwise.

Type and amount of other securities beneficially owned:

6. 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% or 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:

7. Plan of Distribution:

The undersigned has reviewed the form of Plan of Distribution attached as Annex A to the Registration Rights Agreement, and hereby confirms that, except as set forth below, the information contained therein regarding the undersigned and its plan of distribution is correct and complete.

State any exceptions here:

The undersigned agrees to promptly notify the Company of any inaccuracies or changes in the information provided herein that may occur subsequent to the date hereof and prior to the effective date of any applicable Resale Registration Statement. All notices hereunder and pursuant to the Registration Rights Agreement shall be made in accordance with the notice provisions contained in the Agreement. In the absence of any such notification, the Company shall be entitled to continue to rely on the accuracy of the information in this Notice and Questionnaire.

By signing below, the undersigned consents to the disclosure of the information contained herein in its answers to Items (1) through (7) above and the inclusion of such information in the Resale Registration Statement and the Prospectus. The undersigned understands that such information will be relied upon by the

Company in connection with the preparation or amendment of any such Registration Statement and the Prospectus.

Once this Notice and Questionnaire is executed by the undersigned and received by the Company, the terms of this Notice and Questionnaire, and the representations and warranties contained herein, shall be binding on, shall inure to the benefit of and shall be enforceable by the respective successors, heirs, personal representatives, and assigns of the Company and the undersigned with respect to the Registrable Securities beneficially owned by the undersigned and listed in Item 3 above.

By signing below, the undersigned acknowledges that it understands its obligation to comply, and agrees that it will comply, with the provisions of the Exchange Act and the rules and regulations thereunder, particularly Regulation M in connection with any offering of Registrable Securities pursuant to the Resale Registration Statement. The undersigned also acknowledges that it understands that the answers to this Questionnaire are furnished for use in connection with Registration Statements filed pursuant to the Registration Rights Agreement and any amendments or supplements thereto filed with the Commission pursuant to the Securities Act.

The undersigned hereby acknowledges and is advised of the following Interpretation A.65 of the July 1997 SEC Manual of Publicly Available Telephone Interpretations regarding short selling:

“An Issuer filed a Form S-3 registration statement for a secondary offering of common stock which is not yet effective. One of the selling stockholders wanted to do a short sale of common stock “against the box” and cover the short sale with registered shares after the effective date. The issuer was advised that the short sale could not be made before the registration statement become effective, because the shares underlying the short sale are deemed to be sold at the time such sale is made. There would, therefore, be a violation of Section 5 if the shares were effectively sold prior to the effective date.”

By returning this Questionnaire, the undersigned will be deemed to be aware of the foregoing interpretation.

I confirm that, to the best of my knowledge and belief, the foregoing statements (including without limitation the answers to this Questionnaire) are correct.

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

Dated: _____

Beneficial Owner: _____

By: _____

Name:

Title:

PLEASE EMAIL A COPY OF THE COMPLETED AND EXECUTED NOTICE AND QUESTIONNAIRE, AND RETURN THE ORIGINAL BY OVERNIGHT MAIL, TO:

Wilson Sonsini Goodrich & Rosati, P.C.
701 Fifth Avenue, Suite 5100
Seattle, WA 98104
Tel: (206) 883-2615
Email: atarn@wsgr.com

THE OFFER AND SALE OF THESE SECURITIES AND THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR ANY APPLICABLE STATE SECURITIES LAWS. THE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED, ASSIGNED OR OTHERWISE DISPOSED OF (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN EACH CASE IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY AND ITS TRANSFER AGENT OR (II) UNLESS SOLD PURSUANT TO RULE 144 UNDER THE SECURITIES ACT. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES; PROVIDED THAT IN CONNECTION WITH ANY FORECLOSURE OR TRANSFER OF THE SECURITIES, THE TRANSFEROR SHALL COMPLY WITH THE PROVISIONS HEREIN, IN THE SECURITIES PURCHASE AGREEMENT AND THE REGISTRATION RIGHTS AGREEMENT, AND UPON FORECLOSURE OR TRANSFER OF THE SECURITIES, SUCH FORECLOSING PERSON OR TRANSFEREE SHALL COMPLY WITH ALL PROVISIONS CONTAINED HEREIN, IN THE SECURITIES PURCHASE AGREEMENT AND THE REGISTRATION RIGHTS AGREEMENT.

ALPINE IMMUNE SCIENCES, INC.

PREFUNDED WARRANT TO PURCHASE COMMON STOCK

Number of Shares: []
(subject to adjustment)

Warrant No. PF2021-[]

Original Issue Date: September [17], 2021

Alpine Immune Sciences, Inc., a Delaware corporation (the "*Company*"), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [] or its registered assigns (the "*Holder*"), is entitled, subject to the terms set forth below, to purchase from the Company up to a total of [] shares of common stock, \$0.001 par value per share (the "*Common Stock*"), of the Company (each such share, a "*Warrant Share*" and all such shares, the "*Warrant Shares*") at an exercise price per share equal to \$0.001 per share (as adjusted from time to time as provided in Section 9 herein, the "*Exercise Price*"), upon surrender of this *Prefunded Warrant to Purchase Common Stock* (including any Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, the "*Warrant*") at any time and from time to time on or after the date hereof (the "*Original Issue Date*"), subject to the following terms and conditions:

This Warrant is one of a series of similar warrants issued pursuant to that certain Securities Purchase Agreement, dated September 14, 2021, by and among the Company and the Purchasers identified therein (the "*Purchase Agreement*"). All such Warrants are referred to herein, collectively, as the "Warrants."

1. Definitions. In addition to the terms defined elsewhere in this Warrant, capitalized terms that are not otherwise defined herein have the meanings given to such terms in the Purchase Agreement. For purposes of this Warrant, the following terms shall have the following meanings:

(c) "*Closing Sale Price*" means, for any security as of any date, the last trade price for such security on the Principal Trading Market for such security, as reported by Bloomberg Financial Markets, or, if such Principal Trading Market begins to operate on an extended hours basis and does not designate the last trade price, then the last trade price of

such security prior to 4:00 P.M., New York City time, as reported by Bloomberg Financial Markets, or if the foregoing do not apply, the last trade price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg Financial Markets, or, if no last trade price is reported for such security by Bloomberg Financial Markets, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the "pink sheets" by Pink Sheets LLC. If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Sale Price of such security on such date shall be the fair market value as determined by the Board of Directors using its good faith judgment. The Board of Directors' determination shall be binding upon all parties absent demonstrable error. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during the applicable calculation period.

2. Registration of Warrants. The Company shall register ownership of this Warrant, upon records to be maintained by or on behalf of the Company for that purpose (the "Warrant Register"), in the name of the record Holder (which shall include the initial Holder or, as the case may be, any registered assignee to which this Warrant is permissibly assigned hereunder) 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.

3. Registration of Transfers. Subject to the restrictions on transfer set forth in Section 4.1 of the Purchase Agreement and compliance with all applicable securities laws, the Company shall register the transfer of all or any portion of this Warrant in the Warrant Register, upon surrender of this Warrant, with the Form of Assignment attached as Schedule 2 hereto duly completed and signed, to the Company's transfer agent or to the Company at its address specified in the Purchase Agreement and (x) delivery, at the request of the Company, of an opinion of counsel reasonably satisfactory to the Company to the effect that the transfer of such portion of this Warrant may be made pursuant to an available exemption from the registration requirements of the Securities Act and all applicable state securities or blue sky laws and (y) delivery by the transferee of a written statement to the Company certifying that the transferee is an "accredited investor" as defined in Rule 501(a) under the Securities Act and making the representations and certifications set forth in Section 3.2 of the Purchase Agreement, to the Company at its address specified in the Purchase Agreement. Upon any such registration or transfer, a new warrant to purchase Common Stock in substantially the form of this Warrant (any such new warrant, a "New Warrant") evidencing the portion of this Warrant so transferred shall be issued to the transferee, and a New Warrant evidencing the remaining portion of this Warrant not so transferred, if any, shall be issued to the transferring Holder. The acceptance of the New Warrant by the transferee thereof shall be deemed the acceptance by such transferee of all of the rights and obligations in respect of the New Warrant that the Holder has in respect of this Warrant. The Company shall prepare, issue and deliver at the Company's own expense any New Warrant under this Section 3. Until due presentment for registration of transfer, the Company may treat the registered Holder hereof as the owner and holder for all purposes, and the Company shall not be affected by any notice to the contrary.

4. Exercise and Duration of Warrants.

(a) All or any part of this Warrant shall be exercisable by the registered Holder in any manner permitted by this Warrant at any time and from time to time on or after the Original Issue Date.

(b) The Holder may exercise this Warrant by delivering to the Company (i) an exercise notice, in the form attached as Schedule 1 hereto (the "Exercise Notice"), completed and duly signed, and (ii) payment of the Exercise Price for the number of Warrant Shares as to which this Warrant is being exercised (which may take the form of a "cashless exercise" if so indicated in the Exercise Notice pursuant to Section 10 below), and the date on which the last of such items is delivered to the Company (as determined in accordance with the notice provisions hereof) is an "Exercise Date." Within two (2) days following the delivery of the Exercise Notice (the "Payment Deadline"), the Holder shall make payment with respect to the Exercise Price for the number of Warrant Shares as to which this Warrant is being exercised; provided that the Company's obligations to deliver such Warrant Shares shall be delayed on a day-for-day basis each day after the Payment Deadline such payment of the Exercise Price is not paid. The delivery by (or on behalf of) the Holder of the Exercise Notice and the applicable Exercise Price as provided above shall constitute the Holder's certification to the Company that its representations contained in Sections 3.2(b), (c) and (d) of the

Purchase Agreement are true and correct as of the Exercise Date as if remade in their entirety (or, in the case of any transferee Holder that is not a party to the Purchase Agreement, such transferee Holder's certification to the Company that such representations are true and correct as to such transferee Holder as of the Exercise Date). 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 the final Exercise Notice is delivered to the Company. Execution and delivery of the Exercise Notice shall have the same effect as cancellation of the original Warrant and issuance of a New Warrant evidencing the right to purchase the remaining number of Warrant Shares, if any. The aggregate exercise price of this Warrant, except for the Exercise Price, was pre-funded to the Company on or before the Original Issue Date, and consequently no additional consideration (other than the Exercise Price) shall be required to be paid by the Holder to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-funded exercise price under any circumstance or for any reason whatsoever.

5. Delivery of Warrant Shares.

(a) Subject to Section 4(b), upon exercise of this Warrant, the Company shall promptly (but no later than three (3) Trading Days after the Exercise Date (or four (4) Trading Days after the Exercise Date if the last of the Exercise Notice, the Exercise Price (if applicable) and opinion of counsel referred to below in this Section 5(a) (if applicable) is delivered after 5:00 P.M., New York City time, on the Exercise Date) or as soon as reasonably practicable in the event that a certificate is requested (such time, the "Delivery Deadline")) issue or cause to be issued and cause to be delivered to or upon the written order of the Holder and in such name or names as the Holder may designate (provided that, if the Registration Statement is not effective and the Holder directs the Company to deliver a certificate for the Warrant Shares in a name other than that of the Holder or an Affiliate of the Holder, it shall deliver to the Company on the Exercise Date an opinion of counsel reasonably satisfactory to the Company to the effect that the issuance of such Warrant Shares in such other name may be made pursuant to an available exemption from the registration requirements of the Securities Act and all applicable state securities or blue sky laws), (i) an electronic delivery of the Warrant Shares to the Holder's account at the Depository Trust Company ("DTC") or a similar organization, or (ii) if requested by the Holder, a certificate for the Warrant Shares issuable upon such exercise, free of restrictive legends, unless in the case of clause (i) and (ii) a registration statement covering the resale of the Warrant Shares and naming the Holder as a selling stockholder thereunder is not then effective or the Warrant Shares are not freely transferable without volume and manner of sale restrictions pursuant to Rule 144 under the Securities Act, in which case such Holder shall receive a book-entry notation for the Warrant Shares issuable upon such exercise with appropriate restrictive legends. The Holder, or any Person permissibly so designated by the Holder to receive Warrant Shares, shall be deemed to have become the holder of record of such Warrant Shares as of the Exercise Date. If the Warrant Shares are to be issued free of all restrictive legends, the Company shall, upon the written request of the Holder, use its commercially reasonable efforts to deliver, or cause to be delivered, Warrant Shares hereunder electronically through DTC or another established clearing corporation performing similar functions, if available; provided, that, the Company may, but will not be required to, change its transfer agent if its current transfer agent cannot deliver Warrant Shares electronically through such a clearing corporation.

(b) To the extent permitted by law and subject to Section 5(c), the Company's obligations to issue and deliver Warrant Shares in accordance with and subject to the terms hereof (including the limitations set forth in Section 12 below) are absolute and unconditional, irrespective of any action or inaction by the 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 the Holder or any other Person of any obligation to the Company or any violation or alleged violation of law by the Holder or any other Person, and irrespective of any other circumstance that might otherwise limit such obligation of the Company to the Holder in connection with the issuance of Warrant Shares. Subject to Section 5(c), nothing herein shall limit the 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 the Warrant Shares upon exercise of the Warrant as required pursuant to the terms hereof.

(c) If by the close of the third (3rd) Trading Day after the Exercise Date, the Company fails to deliver to the Holder a certificate representing the required number of Warrant Shares in the manner required pursuant to Section 5(a) or fails to credit the Holder's balance account with DTC for such number of Warrant Shares to which the Holder is entitled, and if after such third (3rd) Trading Day and prior to the receipt of such Warrant Shares, the Holder purchases (in an open market transaction or otherwise) 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, within three (3) Trading Days after the Holder's request and in the Holder's sole discretion, either (1) pay in cash to the Holder an amount equal to the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased, at which point the Company's obligation to deliver such certificate (and to issue such Warrant Shares) shall terminate or (2) promptly honor its obligation to deliver to the Holder a certificate or certificates representing such Warrant Shares and pay cash to the Holder in an amount equal to the excess (if any) of Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased in the Buy-In over the product of (A) the number of shares of Common Stock purchased in the Buy-In, times (B) the Closing Sale Price of a share of Common Stock on the Exercise Date.

6. Charges, Taxes and Expenses. Issuance and delivery of the Warrant Shares upon exercise of this Warrant shall be made without charge to the Holder for any issue or transfer tax, transfer agent fee or other incidental tax or expense (excluding any applicable stamp duties) in respect of the issuance of the Warrant Shares, all of which taxes and expenses shall be paid by the Company; *provided, however*, that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of Warrant Shares or the Warrants in a name other than that of the Holder or an Affiliate thereof. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving Warrant Shares upon exercise hereof.

7. Replacement of Warrant. If this Warrant is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for this Warrant, a New Warrant, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction (in such case) and, in each case, a customary and reasonable indemnity and surety bond, if requested by the Company. Applicants for a New Warrant under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Company may prescribe. If a New Warrant is requested as a result of a mutilation of this Warrant, then the Holder shall deliver such mutilated Warrant to the Company as a condition precedent to the Company's obligation to issue the New Warrant.

8. Reservation of Warrant Shares. The Company covenants that it will, at all times while this Warrant is outstanding, reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue Warrant Shares upon exercise of this Warrant as herein provided, the number of Warrant Shares that are initially issuable and deliverable upon the exercise of this entire Warrant, free from preemptive rights or any other contingent purchase rights of persons other than the Holder (taking into account the adjustments and restrictions of Section 9). The Company covenants that all Warrant Shares so issuable and deliverable shall, upon issuance and the payment of the applicable Exercise Price (or upon a "cashless exercise" pursuant to Section 10) in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and non-assessable. The Company will take all commercially reasonable actions as may be reasonably necessary to assure that such shares of Common Stock may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of any securities exchange or automated quotation system upon which the Common Stock may be listed. The Company further covenants that it will not, without the prior written consent of the Holder, take any actions to increase the par value of the Common Stock at any time while this Warrant is outstanding.

9. Certain Adjustments. The Exercise Price and number of Warrant Shares issuable upon exercise of this Warrant are subject to adjustment from time to time as set forth in this Section 9.

(a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock that is payable in shares of Common Stock, (ii) subdivides its outstanding shares of Common Stock into a larger number of shares, or

(iii) combines its outstanding shares of Common Stock into a smaller number of shares, then in each such case, the Exercise Price shall be multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately before such event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, and any adjustment pursuant to clause (ii) or (iii) of this paragraph shall become effective immediately after the effective date of such subdivision or combination.

(b) Pro Rata Distributions. If the Company, at any time while this Warrant is outstanding, distributes to all holders of Common Stock for no consideration (i) evidences of its indebtedness, (ii) any security (other than a distribution of Common Stock covered by the preceding paragraph), (iii) rights or warrants to subscribe for or purchase any security, or (iv) any other asset (in each case, "*Distributed Property*"), then, upon any exercise of this Warrant that occurs after the record date fixed for determination of stockholders entitled to receive such distribution, the Holder shall be entitled to receive, in addition to the Warrant Shares otherwise issuable upon such exercise (if applicable), the Distributed Property that such Holder would have been entitled to receive in respect of such number of Warrant Shares had the Holder been the record holder of such Warrant Shares immediately prior to such record date without regard to any limitation on exercise contained therein. Notwithstanding anything herein to the contrary, the foregoing provisions in this Section 9(b) shall not apply to, or be triggered by, any rights issued by the Company (either separately or that attach to any securities of the Company) in connection with any stockholders rights agreement, poison pill or other similar anti-takeover provision under the Company's certificate of incorporation, bylaws or other documents.

(c) Fundamental Transactions. If, at any time while this Warrant is outstanding, the Company effects a "*Fundamental Transaction*" (to be defined as (i) any merger or consolidation of the Company with or into another Person, (ii) any sale of all or substantially all of the Company's and its subsidiaries' assets, taken as a whole, (iii) any reclassification of the Common Stock (other than a change to par value, or from par value to no par value or changes resulting from a combination or subdivision), or (iv) any statutory exchange of the outstanding shares of Common Stock, as a result of which, the holders of the Common Stock would be entitled to receive, or their Common Stock would be converted into, or exchanged for, shares, stock, other securities, or other property or assets (including cash or any combination thereof), then, to the extent then permitted under applicable laws, rules and regulations (including the rules of the Nasdaq Stock Market or any exchange on which the Common Stock is then listed), upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, the same kind and amount of securities, cash, assets or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant without regard to any limitations on exercise contained herein (the "*Alternate Consideration*"), and after receipt of such Alternate Consideration, the obligations of the Company, surviving entity or corporation purchasing or otherwise acquiring such assets or other appropriate corporation or Person shall be deemed satisfied in full and this Warrant terminated with respect to the portion so exercised. The Company shall not effect any such Fundamental Transaction unless prior to or simultaneously with the consummation thereof, any successor to the Company, surviving entity or the corporation purchasing or otherwise acquiring such assets or other appropriate corporation or Person shall assume the obligation to deliver to the Holder, such Alternate Consideration as, in accordance with the foregoing provisions, the Holder may be entitled to receive, and the other obligations under this Warrant. The provisions of this Section 9(c) shall similarly apply to subsequent transactions analogous of a Fundamental Transaction type.

(d) Number of Warrant Shares. Simultaneously with any adjustment to the Exercise Price pursuant to Section 9, the number of Warrant Shares that may be purchased upon exercise of this Warrant shall be increased or decreased proportionately, so that after such adjustment the aggregate Exercise Price payable hereunder for the increased or decreased number of Warrant Shares shall be the same as the aggregate Exercise Price in effect immediately prior to such adjustment.

(e) Calculations. All calculations under this Section 9 shall be rounded down to the nearest whole cent or the nearest whole share, as applicable.

(f) Notice of Adjustments. Upon the occurrence of each adjustment pursuant to this Section 9, the Company at its expense will, at the written request of the Holder, promptly compute such adjustment, in good faith, in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment, including a statement of the adjusted Exercise Price and adjusted number or type of Warrant Shares or other securities issuable upon exercise of this Warrant (as applicable), describing the transactions giving rise to such adjustments and showing in detail the facts upon which such adjustment is based. Upon written request, the Company will promptly deliver a copy of each such certificate to the Holder and to the Company's transfer agent.

(g) Notice of Corporate Events. If, while this Warrant is outstanding, the Company (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including, without limitation, any granting of rights or warrants to subscribe for or purchase any capital stock of the Company, (ii) enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up of the affairs of the Company, then, except if such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall deliver to the Holder a notice of such transaction at least five (5) Trading Days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction; *provided, however*, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice. In addition, if while this Warrant is outstanding, the Company authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction contemplated by Section 9(c), the Company shall deliver to the Holder a notice of such Fundamental Transaction at least fifteen (15) days prior to the date such Fundamental Transaction is consummated. Holder agrees to maintain any information disclosed pursuant to this Section 9(g) in confidence until such information is publicly available, and shall comply with applicable law with respect to trading in the Company's securities following receipt any such information.

10. Payment of Exercise Price. The Holder shall pay the Exercise Price in immediately available funds by wire transfer to an account designated by the Company; provided, however, that if, on any Exercise Date either (i) there is not an effective Registration Statement (as defined in that certain Registration Rights Agreement, of even date herewith, by and among the Company and the several Purchasers signatory thereto) registering, or no current prospectus available for, the resale of the Warrant Shares by the Holder or (ii) upon the Holder's election, the Holder may, in its sole discretion, satisfy its obligation to pay the Exercise Price through a "cashless exercise", in which event the Company shall issue to the Holder the number of Warrant Shares in an exchange of securities effected pursuant to Section 3(a)(9) of the Securities Act, as determined as follows:

$$X = Y [(A-B)/A]$$

where:

"X" equals the number of Warrant Shares to be issued to the Holder;

"Y" equals the total number of Warrant Shares with respect to which this Warrant is then being exercised;

"A" equals the Closing Sale Price of the shares of Common Stock (as reported by Bloomberg Financial Markets) as of the Trading Day on the date immediately preceding the Exercise Date (the "*Fair Market Value*"); and

"B" equals the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

For purposes of Rule 144 promulgated under the Securities Act, it is intended, understood and acknowledged that the Warrant Shares issued in a "cashless exercise" transaction shall be deemed to have been acquired by the Holder, and the holding period for the Warrant Shares shall be deemed to have commenced, on the date this Warrant was

originally issued pursuant to the Purchase Agreement (provided that the Commission continues to take the position that such treatment is proper at the time of such exercise).

11. Company-Elected Conversion. The Company shall provide to the Holder prompt written notice if after the Original Issue Date the Company is unable to issue the Warrant Shares without restrictive legend, because the Commission has issued a stop order with respect to, or the Commission or Company has otherwise suspended or withdrawn, a Registration Statement covering the resale of the Warrant Shares, either temporarily or permanently, or otherwise (each a “*Restrictive Legend Event*”). To the extent that (A) a Restrictive Legend Event occurs, (B) at such time the Warrant Shares would be saleable under Rule 144 without compliance with the manner of sale or volume restrictions, (C) the Company has delivered the notice described in the immediately preceding sentence, and (D) the Holder attempts to exercise the Warrant after receipt of such notice by paying cash, the Company shall (i) if the Fair Market Value (as calculated above) of the Warrant Shares is greater than the Exercise Price, provide written notice to the Holder that the Company will deliver that number of Warrant Shares to the Holder as should be delivered in a cashless exercise in accordance with Section 10, and return to the Holder all consideration paid to the Company in connection with the Holder’s attempted exercise of this Warrant (a “*Company-Elected Conversion*”), or (ii) at the election of the Holder to be given within five (5) days of receipt of notice of a Company-Elected Conversion, the Holder shall be entitled to rescind the previously submitted Exercise Notice and the Company shall return all consideration paid by Holder for such Warrant Shares upon such rescission.

12. Limitations on Exercise.

(a) Notwithstanding anything to the contrary herein, the Company shall not effect any exercise of this Warrant, and the holder shall not be entitled to exercise this Warrant for a number of Warrant Shares in excess of that number of Warrant Shares which, upon giving effect or immediately prior to such exercise, would cause (i) the aggregate number of shares of Common Stock beneficially owned by the Holder, its Affiliates and any Persons who are members of a Section 13(d) group with such Holder or its Affiliates to exceed 9.99% (the “*Maximum Percentage*”) of the total number of issued and outstanding shares of Common Stock of the Company following such exercise, or (ii) the combined voting power of the securities of the Company beneficially owned by the Holder and its Affiliates and any other Persons who are members of a Section 13(d) group with such Holder or its Affiliates to exceed the Maximum Percentage of the combined voting power of all of the securities of the Company then outstanding following such exercise. For purposes of this paragraph, beneficial ownership and whether a holder is a member of a Section 13(d) group shall be calculated and determined in accordance with Section 13(d) of the Exchange Act and the rules promulgated thereunder. For purposes of this Warrant, in determining the number of outstanding shares of Common Stock, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Quarterly Report on Form 10-Q or Annual Report on Form 10-K, as the case may be, filed with the Commission prior to the date hereof, (y) a more recent public announcement by the Company or (z) any other notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written request of the Holder, the Company shall within three (3) Trading Days confirm in writing or by electronic mail 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 since the date as of which such number of outstanding shares of Common Stock was reported. By written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage specified not in excess of 19.99% specified in such notice; provided that any such increase will not be effective until the sixty-first (61st) day after such notice is delivered to the Company. For purposes of this Section 12(a), the aggregate number of shares of Common Stock or voting securities beneficially owned by the Holder and its Affiliates and any other Persons who are members of a Section 13(d) group with such Holder or its Affiliates shall include the shares of Common Stock issuable upon (x) the 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 exercise of the remaining unexercised and non-cancelled portion of this Warrant by the Holder and (y) the exercise or conversion of the unexercised, non-converted or non-cancelled portion of any other securities of the Company that do not have voting power (including without limitation any securities of the Company 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), is subject to a limitation on conversion or exercise analogous to the limitation contained herein and is beneficially owned by the Holder or any of its Affiliates and other Persons who are members of a Section 13(d) group with such Holder or its Affiliates.

(b) This Section 12 shall not restrict the number of shares of Common Stock which a Holder may receive or beneficially own in order to determine the amount of securities or other consideration that such Holder may receive in the event of a Fundamental Transaction as contemplated in Section 9(c) of this Warrant.

13. No Fractional Shares. No fractional Warrant Shares will be issued in connection with any exercise of this Warrant. In lieu of any fractional shares that would otherwise be issuable, the number of Warrant Shares to be issued shall be rounded down to the next whole number and the Company shall pay the Holder in cash the fair market value (based on the Closing Sale Price) for any such fractional shares.

14. Notices. Any and all notices or other communications or deliveries hereunder (including, without limitation, any Exercise Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile or confirmed e-mail at the facsimile number or e-mail address specified in the Purchase Agreement prior to 5:30 P.M., New York City time, on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile or confirmed e-mail at the facsimile number or e-mail address specified in the Purchase Agreement 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 Trading Day following the date of mailing, if sent by nationally recognized overnight courier service specifying next business day delivery, and (iv) upon actual receipt by the Person to whom such notice is required to be given, if by hand delivery. The address and facsimile number of a Person for such notices or communications shall be as set forth in the Purchase Agreement unless changed by such Person by two (2) Trading Days' prior written notice to the other Persons in accordance with this Section 14.

15. Warrant Agent. The Company shall initially serve as warrant agent under this Warrant. Upon fifteen (15) days' notice to the Holder, the Company may appoint a new warrant agent. Any corporation into which the Company or any new warrant agent may be merged or any corporation resulting from any consolidation to which the Company or any new warrant agent shall be a party or any corporation to which the Company or any new warrant agent transfers substantially all of its corporate trust or stockholders services business shall be a successor warrant agent under this Warrant without any further act. Any such successor warrant agent shall promptly cause notice of its succession as warrant agent to be mailed (by first class mail, postage prepaid) to the Holder at the Holder's last address as shown on the Warrant Register.

16. Miscellaneous.

(a) No Rights as a Stockholder. The Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, amalgamation, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (except upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

(b) Authorized Shares. (i) 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 or articles 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 (a) 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, (b) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable Warrant Shares upon the exercise of this Warrant, and (c) 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.

(ii) 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.

(c) Successors and Assigns. Subject to the restrictions on transfer set forth in this Warrant and in Section 4.1 of the Purchase Agreement, and compliance with applicable securities laws, this Warrant may be assigned by the Holder. This Warrant may not be assigned by the Company without the written consent of the Holder, except to a successor in the event of a Fundamental Transaction. This Warrant shall be binding on and inure to the benefit of the Company and the Holder and their respective successors and permitted assigns. Subject to the preceding sentence, nothing in this Warrant shall be construed to give to any Person other than the Company and the Holder any legal or equitable right, remedy or cause of action under this Warrant. This Warrant may be amended only in writing signed by the Company and the Holder, or their successors and assigns.

(d) Amendment and Waiver. Except as otherwise provided herein and subject to the restrictions set forth in the last sentence of Section 6.4 of the Purchase Agreement, the provisions of the Warrants may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

(e) Acceptance. Receipt of this Warrant by the Holder shall constitute acceptance of and agreement to all of the terms and conditions contained herein.

(f) Governing Law; Jurisdiction. ALL QUESTIONS CONCERNING THE CONSTRUCTION, VALIDITY, ENFORCEMENT AND INTERPRETATION OF THIS WARRANT SHALL BE GOVERNED BY AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAW THEREOF. EACH OF THE COMPANY AND THE HOLDER 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 SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF VIA REGISTERED OR CERTIFIED MAIL OR OVERNIGHT DELIVERY (WITH EVIDENCE OF DELIVERY) TO SUCH PERSON AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THE PURCHASE 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 MANNER PERMITTED BY LAW. EACH OF THE COMPANY AND THE HOLDER HEREBY WAIVES ALL RIGHTS TO A TRIAL BY JURY.

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

(h) Severability. In case any one or more of the provisions of this Warrant shall be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Warrant shall not in any way be affected or impaired thereby, and the Company and the Holder will attempt in good faith to agree upon a valid and enforceable provision which shall be a commercially reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

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

ALPINE IMMUNE SCIENCES, INC.

By: _____
Name: Paul Rickey
Title: Senior Vice President and Chief Financial Officer

SCHEDULE 1

FORM OF EXERCISE NOTICE

[To be executed by the Holder to purchase shares of Common Stock under the Warrant]

Ladies and Gentlemen:

(1) The undersigned is the Holder of Warrant No. ___ (the “Warrant”) issued by Alpine Immune Sciences, Inc., a Delaware corporation (the “Company”). Capitalized terms used herein and not otherwise defined herein have the respective meanings set forth in the Warrant.

(2) The undersigned hereby exercises its right to purchase _____ Warrant Shares pursuant to the Warrant.

(3) The Holder intends that payment of the Exercise Price shall be made as (check one):

Cash Exercise

“Cashless Exercise” under Section 10 of the Warrant

(4) If the Holder has elected a Cash Exercise, the Holder shall pay the sum of \$ _____ in immediately available funds to the Company in accordance with the terms of the Warrant.

(5) Pursuant to this Exercise Notice, the Company shall deliver to the Holder Warrant Shares determined in accordance with the terms of the Warrant.

(6) By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended) permitted to be owned under Section 12(a) of the Warrant to which this notice relates.

(7) By its delivery of this Exercise Notice and pursuant to Section 4(b) of the Warrant, the undersigned certifies to the Company that its representations contained in Sections 3.2(b), (c) and (d) of the Purchase Agreement are true and correct as of the date hereof as if remade in their entirety (or, in the case of any transferee Holder that is not a party to the Purchase Agreement, such transferee Holder’s certification to the Company that such representations are true and correct as to such transferee Holder as of the date hereof).

Dated: _____

Name of Holder: _____

By: _____

Name: _____

Title: _____

(Signature must conform in all respects to name of Holder as specified on the face of the Warrant)

SCHEDULE 2

FORM OF ASSIGNMENT

[To be completed and executed by the Holder only upon transfer of the Warrant]

FOR VALUE RECEIVED, the undersigned hereby sells, assigns and transfers unto _____ (the “*Transferee*”) the right represented by the within Warrant to purchase _____ shares of Common Stock of Alpine Immune Sciences, Inc. (the “*Company*”) to which the within Warrant relates and appoints _____ attorney to transfer said right on the books of the Company with full power of substitution in the premises. In connection therewith, the undersigned represents, warrants, covenants and agrees to and with the Company that:

- (a) the offer and sale of the Warrant contemplated hereby is being made in compliance with Section 4(a)(1) of the United States Securities Act of 1933, as amended (the “*Securities Act*”) or another valid exemption from the registration requirements of Section 5 of the Securities Act and in compliance with all applicable securities laws of the states of the United States;
- (b) the undersigned has not offered to sell the Warrant by any form of general solicitation or general advertising, including, but not limited to, any advertisement, article, notice or other communication published in any newspaper, magazine or similar media or broadcast over television or radio, and any seminar or meeting whose attendees have been invited by any general solicitation or general advertising;
- (c) the undersigned has read the Transferee’s investment letter included herewith, and to its actual knowledge, the statements made therein are true and correct; and
- (d) the undersigned understands that the Company may condition the transfer of the Warrant contemplated hereby upon the delivery to the Company by the undersigned or the Transferee, as the case may be, of a written opinion of counsel (which opinion shall be in form, substance and scope customary for opinions of counsel in comparable transactions) to the effect that such transfer may be made without registration under the Securities Act and under applicable securities laws of the states of the United States.

Dated: _____

(Signature must conform in all respects to name of holder as specified on the face of the Warrant)

Address of Transferee

In the presence of:

September 14, 2021

Mitchell H. Gold, M.D.
Executive Chairman and Chief Executive Officer
Alpine Immune Sciences, Inc.
188 E. Blaine Street, Suite 200
Seattle, WA 98102

Re: 3(a)(9) Exchange Agreement

Dear Dr. Gold:

This letter agreement (the “**Agreement**”) confirms the agreement of Alpine Immune Sciences, Inc., a Delaware corporation (the “**Company**”), and the holder of the Common Stock listed on Schedule I attached hereto (the “**Holder**”; the Company and the Holder, together, the “**Parties**”), pursuant to which the Holder has agreed to exchange an aggregate of 1,200,000 shares of Common Stock, par value \$0.001 per share (the “**Common Stock**”) of the Company beneficially owned by the Holder (the “**Shares**”) for one or more pre-funded warrants in the form attached hereto as Exhibit A (each a “**Pre-funded Warrant**”) to purchase an aggregate number shares of Common Stock equal to the number of Shares (the “**Warrant Shares**”) of the Company so exchanged, pursuant to Section 3(a)(9) of the Securities Act of 1933, as amended (the “**Securities Act**”), on terms specified below.

- 1) Immediately after the closing of the private placement offering (the “**Private Transaction**”) currently contemplated by the Company (the “**Closing Date**”), the Holder shall exchange the Shares for the Pre-funded Warrants exercisable for the Warrant Shares (the “**Exchange**”) in the respective amounts listed on Schedule I. On the Closing Date: (a) the Holder shall cause the applicable Depository Trust Company (“**DTC**”) participant (each a “**DTC Participant**”) to (A) transfer via the DTC’s “deposit/withdrawal at custodian” system (“**DWAC**”) the Shares to the Company’s transfer agent, Broadridge Corporate Issuer Solutions, Inc. (including any successor, the “**Transfer Agent**”) and (B) take such further action as may be necessary or appropriate to notify the Transfer Agent that the Shares have been surrendered to the Transfer Agent by the applicable DTC Participant via DWAC; (b) upon confirmation that the Shares have been surrendered to the Transfer Agent, the Company shall instruct the Transfer Agent to cancel the Shares; and (c) the Company shall issue and deliver to the Holder the Pre-funded Warrants exercisable for the Warrant Shares, in the amounts and registered in the names set forth on Schedule I. Notwithstanding the foregoing, in lieu of clause (a) above, the Holder may satisfy its obligation to surrender the Shares by causing the Shares to be transferred via DTC to an account specified in writing by the Company or may surrender by any other method agreed to by the Company.
- 2) The Company represents and warrants to the Holder as follows:

- a. The Company is an entity duly incorporated, validly existing and in good standing under the laws of the jurisdiction of its incorporation with the requisite power and authority to enter into and to consummate the transactions contemplated by this Agreement and otherwise to carry out its obligations hereunder.
- b. Neither the Company nor any of its affiliates nor any person acting on behalf of or for the benefit of any of the foregoing, has paid or given, or agreed to pay or give, directly or indirectly, any commission or other remuneration (within the meaning of Section 3(a)(9) of the Securities Act and the rules and regulations of the Commission promulgated thereunder) for soliciting the Exchange. Assuming the representations and warranties of the Holder contained herein are true and complete, the Exchange will qualify for the registration exemption contained in Section 3(a)(9) of the Securities Act.
- c. It has the requisite corporate power and authority and power to enter into this Agreement and to consummate the Exchange; such transactions shall not contravene any contractual, regulatory, statutory or other obligation or restriction applicable to the Company; and this Agreement will be enforceable against the Company in accordance with its terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally, the enforcement of applicable creditors' rights and remedies.
- d. It has reserved a sufficient number of shares of Common Stock as may be necessary to fully permit the exercise of the Pre-funded Warrants and the issuance of the Warrant Shares, without regard to any beneficial ownership limits set forth in the Pre-funded Warrant.
- e. The Warrant Shares, when issued and delivered in accordance with the terms of the Pre-funded Warrants for the consideration required therein, will be duly and validly issued, fully paid and nonassessable.

3) The Holder represents and warrants to the Company as follows:

- a. It is an entity duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization with the requisite power and authority to enter into and to consummate the transactions contemplated by this Agreement and otherwise to carry out its obligations hereunder.
- b. It has the requisite power and authority to enter into this Agreement and consummate the Exchange; such transactions shall not contravene any contractual, regulatory, statutory or other obligation or restriction applicable to the Holder; and this Agreement will be enforceable against

the Holder in accordance with its terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally, the enforcement of applicable creditors' rights and remedies.

- c. It is the record and beneficial owner of, and has valid and marketable title to, the Shares being exchanged by it pursuant to this Agreement, free and clear of any lien, pledge, restriction or other encumbrance (other than restrictions arising pursuant to applicable securities laws), and has the absolute and unrestricted right, power and capacity to surrender and exchange the Shares being exchanged by it pursuant to this Agreement, free and clear of any lien, pledge, restriction or other encumbrance. It is not a party to or bound by, and the Shares being exchanged by it pursuant to this Agreement are not subject to, any agreement, understanding or other arrangement (i) granting any option, warrant or right of first refusal with respect to such Shares to any person, (ii) restricting its right to surrender and exchange such Shares as contemplated by this Agreement, or (iii) restricting any other of its rights with respect to such Shares.
 - d. It (i) is organized in the jurisdiction set forth next to its name in Schedule I attached hereto; and (ii) is acquiring the Pre-funded Warrants as principal.
 - e. Neither it nor any of its affiliates nor any person acting on behalf of or for the benefit of any of the foregoing, has paid or given, or agreed to pay or give, directly or indirectly, any commission or other remuneration (within the meaning of Section 3(a)(9) and the rules and regulations of the Commission promulgated thereunder) for soliciting the Exchange.
 - f. It acknowledges and agrees that the Pre-funded Warrants have not been and are not being registered under the Securities Act or any state securities laws and that the Company has no obligation to register or qualify by prospectus the Pre-funded Warrants or the Warrant Shares issuable upon exercise thereof. It acknowledges that the Pre-funded Warrants shall bear a restrictive legend referring to the Securities Act.
- 4) The obligations of the Company and the Holder hereunder to complete the Exchange on the Closing Date is subject to the satisfaction, at or before the Closing Date, of each of the following conditions, provided that these conditions may be waived by either party at any time in its sole discretion by providing the other party with prior written notice thereof:
- a. The representations and warranties of the parties shall be true and correct in all respects as of the date when made and as of the Closing Date as though made at that time (except for representations and warranties that speak as of a specific date, which shall be true and correct as of such

specified date), and the parties shall have performed, satisfied and complied with the covenants, agreements and conditions required by this Agreement to be performed, satisfied or complied with by each party at or prior to the Closing Date.

- b. To the extent applicable, the Company shall have obtained the conditional approval of The Nasdaq Stock Market LLC with respect to the consummation of the transactions contemplated by this Agreement.
- 5) This Agreement, and any action or proceeding arising out of or relating to this agreement, shall be exclusively governed by the laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule that would cause the application of the laws of any other jurisdiction.
- 6) The obligation of the Company to consummate the Exchange is subject to and conditioned upon the closing of the Private Transaction. This Agreement shall automatically terminate if the Private Transaction does not close on or before October 1, 2021, or such later date as mutually agreed by the Company and the Holder.
- 7) In the event that any part of this agreement is declared by any court or other judicial or administrative body to be null, void or unenforceable, said provision shall survive to the extent it is not so declared, and all of the other provisions of this agreement shall remain in full force and effect. In such an event, the Holder and the Company shall endeavor in good faith negotiations to modify this agreement so as to affect the original intent of the parties as closely as possible.
- 8) The Holder shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the Company may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.
- 9) This Agreement represents the entire agreement and understanding among the parties regarding the terms and conditions of the Exchange and supersedes all prior agreements, arrangements and understandings with respect to the subject matter hereof. This Agreement may only be amended in a written instrument executed by the parties.
- 10) This Agreement may be executed in two or more counterparts, each of which shall constitute an original, but all of which, when taken together, shall constitute but one instrument, and shall become effective when one or more counterparts have been signed by each party hereto and delivered to the other parties.

[SIGNATURE PAGE FOLLOWS]

Please sign to acknowledge agreement with the above terms and return to the undersigned.

Holder:

FRAZIER LIFE SCIENCES VIII, L.P.

By: FHM Life Sciences VIII, L.P.
Its general partner

By: FHM Life Sciences VIII, L.L.C.
Its general partner

By: /s/ Jamie Topper

Name: Jamie Topper

Title: Member

[Signature Page to Exchange Agreement]

Acknowledged and agreed to:

Alpine Immune Sciences, Inc.

By: /s/ Paul Rickey

Name: Paul Rickey

Title: Senior Vice President and Chief Financial Officer

Exhibit A
Form of Pre-Funded Warrant to Purchase Common Stock
(Circulated separately.)

Schedule I

Holder	Jurisdiction of Incorporation	Shares Subject to Pre- Funded Warrants Issued in Exchange
Frazier Life Sciences VIII, L.P.	Delaware	1,200,000.00

Alpine Immune Sciences Announces \$91 Million Private Placement

SEATTLE, September 15, 2021 – Alpine Immune Sciences, Inc. (NASDAQ:ALPN), a leading clinical-stage immunotherapy company focused on developing innovative treatments for cancer and autoimmune/inflammatory diseases, today announced it has entered into a definitive securities purchase agreement for the sale of common stock and prefunded warrants, as described below, in a private placement with certain institutional and other accredited investors for gross proceeds to Alpine of approximately \$91 million, before deducting offering expenses. The private placement is being led by Frazier Life Sciences Public Fund with participation from Decheng Capital, BVF Partners, TCG X, Avidity Partners, OrbiMed, Omega Fund, and Logos Capital, among others.

"As a long-term backer of Alpine, we are impressed by the company's progress and their emergence as a leader in both immunology and immuno-oncology," said James Topper, M.D., Ph.D, Managing General Partner of Frazier's Life Sciences team. "This financing will help the company to pursue a focused and rapid development plan for ALPN-303, a potentially best-in-class inhibitor of the BAFF and APRIL pathways, and will also support the ongoing development of ALPN-202 as it enters monotherapy expansion cohorts next year and expands its development efforts in combination with Keytruda. We are pleased to lead this syndicate of strong investors and look forward to supporting the company in this next phase of growth."

Pursuant to the terms of the securities purchase agreement, at the closing of the private placement, Alpine will issue approximately 6.5 million shares of common stock and approximately 3.2 million prefunded warrants to purchase the same number of shares of common stock. Both the common stock and prefunded warrants will be sold at a price of \$9.40 per share or prefunded warrant, respectively. The prefunded warrants will have a per share exercise price of \$0.001 and will be exercisable at any time on or after the closing date. The price of the common stock and prefunded warrants is at a 4.4% premium to the closing price of \$9.00 per share of Alpine's common stock on the Nasdaq Global Market on September 14, 2021.

The private placement is expected to close on or about September 17, 2021, subject to the satisfaction of customary closing conditions. Additional details regarding the private placement will be included in a Form 8-K to be filed by Alpine with the Securities and Exchange Commission ("SEC").

Alpine intends to use the net proceeds to support the expansion of its pipeline, including the development of ALPN-303 in lupus and other B cell-mediated inflammatory diseases. In addition, net proceeds will be used to support the further clinical development of ALPN-202 as well as Alpine's discovery programs and general corporate purposes.

In connection with the entry into the securities purchase agreement, an affiliate of Frazier Life Sciences Public Fund entered into an exchange agreement with Alpine, pursuant to which Alpine will exchange an aggregate of 1.2 million shares of common stock currently held by the affiliate of Frazier Life Sciences Public Fund for prefunded warrants to purchase an aggregate of 1.2 million shares of common stock, which prefunded warrants have identical terms to the prefunded warrants sold pursuant to the securities purchase agreement. After giving effect to the exchange of 1.2 million shares of common stock and the issuance of the approximately 6.5 million shares pursuant to the securities purchase agreement, the number of shares of Alpine's outstanding common stock immediately after this offering would be approximately 29.2 million as of July 30, 2021. The closing of the exchange is subject to customary closing conditions and is contingent upon and will occur immediately following the closing of the private placement.

The securities being sold in the private placement have not been registered under the Securities Act of 1933, as amended, or state securities laws and may not be offered or sold in the United States absent registration with the SEC or an applicable exemption from such registration requirements. Alpine has agreed to file a registration statement with the SEC covering the resale of the shares of common stock issuable in connection with the private placement and upon exercise of the prefunded warrants.

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

About Alpine Immune Sciences, Inc.

Alpine Immune Sciences, Inc. is committed to leading a new wave of immune therapeutics. With world-class research and development capabilities, a highly productive scientific platform, and a proven management team, Alpine is seeking to create first- or best-in-class multifunctional immunotherapies via unique protein engineering technologies to improve patients' lives. Alpine has entered into strategic collaborations with leading global biopharmaceutical companies and has a diverse pipeline of clinical and preclinical candidates in development. For more information, visit www.alpineimmunesciences.com. Follow @AlpineImmuneSci on Twitter and LinkedIn.

About Frazier Healthcare Partners

Founded in 1991, Frazier Healthcare Partners is a leading provider of private equity capital to healthcare companies. With more than \$6.2 billion total capital raised, Frazier has invested in more than 200 companies with transaction types ranging from buyouts of profitable healthcare companies to venture capital and company creation. Frazier has a philosophy of partnering with strong management teams while leveraging its internal operating resources and network to build exceptional companies. Frazier has offices in Seattle, Wash., and Menlo Park, Calif., and invests broadly across the U.S., Canada and Europe. For more information about Frazier Healthcare Partners, please visit www.frazierhealthcare.com.

Forward-Looking Statements

This release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. These forward-looking statements are not based on historical fact, and include statements regarding Alpine's platform technology, potential therapies, clinical development plans and the timing thereof, the receipt of potential milestones under Alpine's collaborations, the anticipated closing of the private placement and the exchange and the timing thereof, and the expected receipt and use of proceeds from the private placement. Forward-looking statements generally include statements that are predictive in nature and depend upon or refer to future events or conditions, and include words such as "may," "will," "should," "would," "expect," "plan," "intend," and other similar expressions among others. These forward-looking statements are based on current assumptions that involve risks, uncertainties and other factors that may cause actual results, events or developments to be materially different from those expressed or implied by such forward-looking statements. These risks and uncertainties, many of which are beyond our control, include, but are not limited to: Alpine's development programs may not advance into the clinic, succeed in the clinic or result in approved products on a timely or cost-effective basis or at all; Alpine's assumptions regarding its planned expenditures and sufficiency of its cash to fund operations may be incorrect; Alpine may not achieve additional milestone payments pursuant to its collaborations; the impact of competition; adverse conditions in the general domestic and global economic markets; as well as the other risks identified in Alpine's filings with the Securities and Exchange Commission. These forward-looking statements speak only as of the date hereof and Alpine undertakes no obligation to update forward-looking statements, and readers are cautioned not to place undue reliance on such forward-looking statements.

The Alpine logo is a registered trademark or trademark of Alpine Immune Sciences, Inc. in various jurisdictions.

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Investor Relations

Alex Sharif

Director, Investor Relations and Corporate Development

Alpine Immune Sciences, Inc

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