

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, DC 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 12, 2023

**Rocket Pharmaceuticals, Inc.**

(Exact name of registrant as specified in its charter)

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

**001-36829**  
(Commission File Number)

**04-3475813**  
(IRS Employer Identification No.)

**9 Cedarbrook Drive, Cranbury, NJ**  
(Address of principal executive offices)

**08512**  
(Zip Code)

Registrant's telephone number, including area code: (646) 440-9100

**Not applicable**  
(Former name or former address, if changed since last report)

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

- 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(s)	Name of each exchange on which registered
Common stock, \$0.01 par value	RCKT	The Nasdaq Global Market

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

Emerging growth company

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

**Item 1.01 Entry into a Material Definitive Agreement.**

On September 12, 2023, Rocket Pharmaceuticals, Inc. (the “Company”) entered into an underwriting agreement (the “Underwriting Agreement”) with J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC, Leerink Partners LLC and Cowen and Company, LLC, as representatives of the several underwriters named in Schedule A thereto (collectively, the “Underwriters”), pursuant to which the Company agreed to issue and sell up to (i) 7,812,500 shares of common stock (the “Shares”), and (ii) pre-funded warrants (the “Pre-Funded Warrants”) to purchase 3,126,955 shares of common stock (the “Offering”). In addition, the Company granted the Underwriters a 30-day option to purchase up to an additional 1,640,918 shares of its common stock (the “Option Shares”).

The Underwriters exercised their option to purchase the Option Shares in full, and the Offering closed on September 15, 2023.

The Shares and the Option Shares were sold in the Offering at the public offering price of \$16.00 per share and were purchased by the Underwriters from the Company at a price of \$15.04 per share. The Pre-Funded Warrants were sold at a public offering price of \$15.99 per Pre-Funded Warrant, which represents the per share public offering price for the common stock less the \$0.01 per share exercise price for each such Pre-Funded Warrant. Each Pre-Funded Warrant is exercisable as of September 15, 2023 until fully exercised, subject to an ownership limitation pursuant to the Underwriting Agreement.

The Offering was made pursuant to the Company’s effective registration statement on Form S-3 (Registration No. 333-253756), which was previously filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the “Securities Act”), and declared effective on September 10, 2021.

The net proceeds from the Offering, after (i) giving effect to the Underwriters’ full exercise of their option to purchase the Option Shares and (ii) deducting the underwriting discounts and commissions and estimated offering expenses payable by the Company, are expected to be approximately \$188.9 million. The Company currently intends to use the net proceeds from the offering primarily to fund the further development of its pipeline of gene therapies for rare diseases, including the advancement of RP-A501 into a Phase 2 clinical trial and the continued clinical development of RP-A501, to accelerate the development of in-house manufacturing capabilities, and for general corporate purposes. The Company may also use a portion of the net proceeds to in-license, acquire or invest in complementary businesses or products. However, the Company currently has no agreements or commitments to complete any such transaction.

Pursuant to the Underwriting Agreement, the Company’s executive officers and directors, and certain other shareholders entered into agreements in substantially the form included as an exhibit to the Underwriting Agreement, providing for a 90-day “lock-up” period with respect to sales of the Company’s common stock, subject to certain exceptions.

The foregoing is a summary description of the Underwriting Agreement and is qualified in its entirety by the text of the Underwriting Agreement attached as Exhibit 1.1 to this Current Report on Form 8-K and incorporated herein by reference.

The form of Pre-Funded Warrant is filed as Exhibit 4.1 to this report and the description of the terms of the Pre-Funded Warrants is qualified in its entirety by reference to such exhibit.

A copy of the opinion of K&L Gates LLP relating to the validity of the Shares, the Option Shares and the Pre-Funded Warrants issued in the Offering is filed herewith as Exhibit 5.1.

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**Item 9.01 Financial Statements and Exhibits.**

(d) Exhibits

**Exhibit No.**

**Description**

<a href="#">1.1</a>	Underwriting Agreement, dated September 12, 2023, among Rocket Pharmaceuticals, Inc. and J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC, Leerink Partners LLC and Cowen and Company, LLC, as representative of the several underwriters named in Schedule A thereto.
<a href="#">4.1</a>	Form of Pre-Funded Warrant.
<a href="#">5.1</a>	Opinion of K&L Gates LLP.
<a href="#">23.1</a>	Consent of K&L Gates LLP (contained in Exhibit 5.1).
Exhibit 104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

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## SIGNATURES

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

Date: September 15, 2023

**Rocket Pharmaceuticals, Inc.**

By: /s/ Gaurav Shah, MD

Name: Gaurav Shah, MD

Title: Chief Executive Officer and Director

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## Rocket Pharmaceuticals, Inc.

7,812,500 Shares of Common Stock

Pre-Funded Warrants to Purchase 3,126,955 Shares of Common Stock

UNDERWRITING AGREEMENT

September 12, 2023

J.P. MORGAN SECURITIES LLC  
MORGAN STANLEY & CO. LLC  
LEERINK PARTNERS LLC  
COWEN AND COMPANY, LLC

As Representatives of the several Underwriters

c/o J.P. Morgan Securities LLC  
383 Madison Avenue  
New York, New York 10179

c/o Morgan Stanley & Co. LLC  
1585 Broadway  
New York, New York 10036

c/o Leerink Partners LLC  
1301 Avenue of the Americas, 12th Floor  
New York, New York 10019

c/o Cowen and Company, LLC  
599 Lexington Avenue  
New York, New York 10022

Dear Sirs and Madams:

1. **INTRODUCTORY.** Rocket Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), proposes to sell, pursuant to the terms of this Underwriting Agreement, to the several underwriters named in Schedule A hereto (the “**Underwriters**,” or, each, an “**Underwriter**”), an aggregate of (a) 7,812,500 shares of Common Stock, par value \$0.01 per share (the “**Common Stock**”), of the Company (the “**Firm Stock**”) and (b) pre-funded warrants to purchase up to 3,126,955 shares of Common Stock in a form to be mutually agreed upon by the Company and the Representatives (as defined below) (the “**Warrants**”). The Company also proposes to sell to the Underwriters, upon the terms and conditions set forth in Section 3 hereof, up to an additional 1,640,918 shares of Common Stock (the “**Optional Stock**”). The Firm Stock and the Optional Stock are hereinafter collectively referred to as the “**Stock**.” The Stock and the Warrants are herein referred to as the “**Securities**.” The shares of Common Stock issuable upon exercise of the Warrants are herein referred to as the “**Warrant Stock**.” J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC, Leerink Partners LLC and Cowen and Company, LLC are acting as representatives of the several Underwriters and in such capacity are hereinafter referred to as the “**Representatives**.”

2. **REPRESENTATIONS AND WARRANTIES OF THE COMPANY.** The Company represents and warrants to the several Underwriters, as of the date hereof and as of each Closing Date (as defined below), and agrees with the several Underwriters, that:

(a) A registration statement of the Company on Form S-3 (File No. 333-253756) (including all amendments thereto, the “**Initial Registration Statement**”) in respect of the Stock has been filed with the Securities and Exchange Commission (the “**Commission**”) pursuant to Rule 415 under the Securities Act of 1933, as amended (the “**Securities Act**”). The Company meets the requirements for use of Form S-3 under the Securities Act and the rules and regulations of the Commission thereunder (the “**Rules and Regulations**”). The Initial Registration Statement and any post-effective amendment thereto, each in the form heretofore delivered to you, and, excluding exhibits thereto, to you for each of the other Underwriters, have been declared effective by the Commission in such form and meet the requirements of the Securities Act, and the Rules and Regulations. The proposed offering of the Securities and the Warrant Stock may be made pursuant to General Instruction I.B.1. of Form S-3. Other than (i) the Initial Registration Statement, (ii) a registration statement, if any, increasing the size of the offering filed pursuant to Rule 462(b) under the Securities Act and the Rules and Regulations (a “**Rule 462(b) Registration Statement**”), (iii) any Preliminary Prospectus (as defined below), (iv) the Prospectus (as defined below) contemplated by this Agreement to be filed pursuant to Rule 424(b) of the Rules and Regulations in accordance with Section 4(a) hereof and (v) any Issuer Free Writing Prospectus (as defined below), no other document with respect to the offer and sale of the Securities has heretofore been filed with the Commission. No stop order suspending the effectiveness of the Initial Registration Statement, any post-effective amendment thereto or the Rule 462(b) Registration Statement, if any, has been issued and no proceeding for that purpose or pursuant to Section 8A of the Securities Act has been initiated or, to the Company’s knowledge, threatened by the Commission (any preliminary prospectus included in the Initial Registration Statement or filed with the Commission pursuant to Rule 424 of the Rules and Regulations is hereinafter called a “**Preliminary Prospectus**”). The Initial Registration Statement including all exhibits thereto and including the information contained in the Prospectus filed with the Commission pursuant to Rule 424(b) of the Rules and Regulations and deemed by virtue of Rules 430A and 430B under the Securities Act to be part of the Initial Registration Statement at the time it became effective is hereinafter collectively called the “**Registration Statement**.” If the Company has filed a Rule 462(b) Registration Statement, then any reference herein to the term “**Registration Statement**” shall be deemed to include such Rule 462 Registration Statement. The base prospectus included in the Initial Registration Statement at the time of effectiveness thereof, as supplemented by the final prospectus supplement relating to the offer and sale of the Securities, in the form filed pursuant to and within the time limits described in Rule 424(b) under the Rules and Regulations, is hereinafter called the “**Prospectus**.”



Any reference herein to the Registration Statement, Preliminary Prospectus or the Prospectus shall be deemed to refer to and include the documents incorporated by reference therein. Any reference to any amendment or supplement to any Preliminary Prospectus or the Prospectus shall be deemed to refer to and include any documents filed after the date of such Preliminary Prospectus or the Prospectus under the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), and incorporated by reference in such Preliminary Prospectus or Prospectus, as the case may be. Any reference to any amendment to the Registration Statement shall be deemed to refer to and include any annual report of the Company filed pursuant to Section 13(a) or 15(d) of the Exchange Act after the date of this Agreement that is incorporated by reference in the Registration Statement.

(b) As of the Applicable Time (as defined below) and as of the Closing Date or the Option Closing Date (as defined below), as the case may be, neither (i) the Pricing Prospectus (as defined below) and the information included on Schedule C hereto, all considered together (collectively, the “**General Disclosure Package**”), (ii) any individual Limited Use Free Writing Prospectus (as defined below), nor (iii) the bona fide electronic road show (as defined in Rule 433(h)(5) of the Rules and Regulations); when considered together with the General Disclosure Package, included or will include any untrue statement of a material fact or omitted or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; *provided, however*, that the Company makes no representations or warranties as to information contained in or omitted from the Pricing Prospectus or any Issuer Free Writing Prospectus (as defined below), in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriters’ Information (as defined below). As used in this paragraph (b) and elsewhere in this Agreement:

“**Applicable Time**” means 8:30 P.M., New York City time, on the date of this Agreement or such other time as agreed to by the Company and the Representatives.

“**General Use Free Writing Prospectus**” means any Issuer Free Writing Prospectus that is identified on Schedule B to this Agreement.

“**Issuer Free Writing Prospectus**” means any “issuer free writing prospectus,” as defined in Rule 433 of the Rules and Regulations relating to the Securities in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g) of the Rules and Regulations.

“**Limited Use Free Writing Prospectuses**” means any Issuer Free Writing Prospectus that is not a General Use Free Writing Prospectus.

“**Pricing Prospectus**” means the Preliminary Prospectus relating to the Securities that is included in the Registration Statement immediately prior to the Applicable Time, including any document incorporated by reference therein.

“**Written Testing-the-Waters Communication**” means any Testing-the-Waters Communication (as defined below) that is a written communication within the meaning of Rule 405 of the Rules and Regulations.

(c) No order preventing or suspending the use of any Preliminary Prospectus, any Issuer Free Writing Prospectus or the Prospectus relating to the proposed offering of the Securities has been issued by the Commission, and no proceeding for that purpose or pursuant to Section 8A of the Securities Act has been instituted or, to the Company’s knowledge, threatened by the Commission, and each Preliminary Prospectus, at the time of filing thereof, conformed in all material respects to the requirements of the Securities Act and the Rules and Regulations, and did not 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 light of the circumstances under which they were made, not misleading; *provided, however*, that the Company makes no representations or warranties as to information contained in or omitted from any Preliminary Prospectus, in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriters’ Information.

(d) At the respective times the Registration Statement and any amendments thereto became or become effective as to the Underwriters and at each Closing Date, the Registration Statement and any amendments thereto conformed and will conform in all material respects to the requirements of the Securities Act and the Rules and Regulations and did not and will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading; and the Prospectus and any amendments or supplements thereto, at the time the Prospectus or any amendment or supplement thereto was issued and at each Closing Date, conformed and will conform in all material respects to the requirements of the Securities Act and the Rules and Regulations and did not and will not contain an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading; *provided, however*, that the foregoing representations and warranties in this paragraph (d) shall not apply to information contained in or omitted from the Registration Statement or the Prospectus or any amendment or supplement thereto, in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriters’ Information.

(e) Each Issuer Free Writing Prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Securities or until any earlier date that the Company notified or notifies the Representatives as described in Section 4(f) hereof, did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement, the Pricing Prospectus or the Prospectus including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof that has not been superseded or modified, or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading *provided, however*, that the foregoing representations and warranties in this paragraph (e) shall not apply to information contained in or omitted from the Registration Statement, the Pricing Prospectus or the Prospectus, or any amendment or supplement thereto, in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriters’ Information.

(f) The documents incorporated by reference in the Prospectus, when they were filed with the Commission conformed in all material respects to the requirements of the Securities Act or the Exchange Act, as applicable, and the rules and regulations of the Commission thereunder and none of such documents contained any untrue statement of a material fact or omitted to state any material fact required to be stated therein, or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; and any further documents so filed and incorporated by reference in the Prospectus, when such documents are filed with Commission will conform in all material respects to the requirements of the Securities Act or the Exchange Act, as applicable, and the rules and regulations of the Commission thereunder and will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(g) Except as disclosed in the General Disclosure Package, the Company has not, directly or indirectly, distributed and will not distribute any offering material in connection with the offering and sale of the Securities other than any Preliminary Prospectus, the Prospectus, the form of Warrant and other materials, if any, permitted under the Securities Act and consistent with Section 4(c) below. The Company will file with the Commission all Issuer Free Writing Prospectuses (other than a “road show” as described in Rule 433(d)(8) of the Rules and Regulations) in the time and manner required under Rules 163(b)(2) and 433(d) of the Rules and Regulations.



(h) [Reserved].

(i) At the time of filing the Initial Registration Statement, any Rule 462(b) Registration Statement and any post-effective amendments thereto, and at the date hereof, the Company was not, and the Company currently is not, an “ineligible issuer,” as defined in Rule 405 of the Rules and Regulations.

(j) Except as disclosed in the General Disclosure Package, the Company (a) has not engaged in any Testing-the-Waters Communication and (b) has not authorized anyone to engage in Testing-the-Waters Communications, in each case in respect of the offering of the Securities. The Company has not distributed any Written Testing-the-Waters Communications in connection with the offering of the Securities. “**Testing-the-Waters Communication**” means any oral or written communication with potential investors undertaken in reliance on Rule 163B under the Securities Act.

(k) The Company has been duly organized and is validly existing as a corporation (or the foreign equivalent thereof) under the laws of the State of Delaware. The Company is duly qualified to do business and is in good standing as a foreign corporation or other legal entity in each jurisdiction in which its respective ownership or lease of property or the conduct of its business requires such qualification and has all power and authority (corporate or other) necessary to own or hold its properties and to conduct the business in which it is engaged, except where the failure to so qualify or have such power or authority would not (i) have, singularly or in the aggregate, a material adverse effect on the business, properties, management, financial condition, stockholders’ equity, results of operations or prospects of the Company and its subsidiaries taken as a whole, or (ii) impair in any material respect the ability of the Company to perform its obligations under this Agreement or to consummate any transactions contemplated by this Agreement, the General Disclosure Package or the Prospectus (any such effect as described in clauses (i) or (ii), a “**Material Adverse Effect**”). The Company does not own or control, directly or indirectly, any interest in any corporation, partnership, limited liability corporation, association or other entity other than Rocket Pharmaceuticals, Ltd., an exempted company with limited liability organized under the laws of the Cayman Islands, Inotek Securities Corporation, a corporation organized under the laws of the Commonwealth of Massachusetts, Rocket Foundation, Inc., a corporation organized under the laws of Delaware, Spacecraft Seven, LLC, a limited liability company organized under the laws of Delaware, Zebrafish Merger Sub II, Inc., a corporation organized under the laws of Delaware, Renovacor Holdings, Inc., a corporation organized under the laws of Delaware, Rocket Pharmaceuticals B.V., a private limited company organized under the laws of the Netherlands, Rocket Pharmaceuticals GmbH, a limited liability company organized under the laws of Switzerland, and Rocket Pharmaceuticals UK Limited, a limited company organized under the laws of the United Kingdom.

(l) Each of the Company’s “subsidiaries” (for purposes of this Agreement, as defined in Rule 405 under the Securities Act) has been duly organized and is validly existing in good standing (where such concept exists) under the laws of the jurisdiction of its organization and has the power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the General Disclosure Package and the Prospectus. Each of the Company’s subsidiaries is duly qualified to transact business and is in good standing (where such concept exists) in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where failure to be so qualified or in good standing could not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. All of the issued and outstanding share capital or other equity or ownership interests of each of the Company’s subsidiaries has been duly authorized and validly issued, is fully paid and nonassessable (where such concept exists) and is owned by the Company, directly or through subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance or adverse claim, except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus.

(m) This Agreement has been duly authorized, executed and delivered by the Company.

(n) The Securities to be issued and sold by the Company to the Underwriters hereunder has been duly and validly authorized and, when issued and delivered against payment therefor as provided herein, will be duly and validly issued, fully paid and non-assessable and will conform to the descriptions thereof in the Registration Statement, the General Disclosure Package and the Prospectus; and the issuance of the Securities is not subject to any preemptive or similar rights.

(o) All of the outstanding shares of capital stock of the Company have been duly and validly authorized and issued, are fully paid and non-assessable, have been issued in compliance with federal and state securities laws, and conform in all material respects to the description thereof contained in the General Disclosure Package and the Prospectus under the heading “Description of Capital Stock.” 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 were issued in compliance with federal and state securities laws. None of the outstanding shares of Common Stock was issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company other than those which have been waived or satisfied. As of the date set forth in the General Disclosure Package and the Prospectus, there are no authorized or outstanding shares of capital stock, options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company other than those described above or accurately described in the General Disclosure Package. Since such date, the Company has not issued any securities other than Common Stock issued pursuant to the exercise of warrants or upon the exercise of stock options or other awards outstanding under the Company’s stock option plans, options or other securities granted or issued pursuant to the Company’s existing equity compensation plans or other plans, and the issuance of Common Stock pursuant to employee stock purchase plans. The description of the Company’s stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, as described in the General Disclosure Package and the Prospectus, accurately and fairly present in all material respects the information required to be shown with respect to such plans, arrangements, options and rights.

(p) The execution, delivery and performance of this Agreement and the Warrants by the Company, the issue and sale of the Securities by the Company and the consummation of the transactions contemplated hereby will not (with or without notice or lapse of time or both) (i) conflict with or result in a breach or violation of any of the terms or provisions of, constitute a default or a Debt Repayment Triggering Event (as defined below) under, or result in the creation or imposition of any lien, encumbrance, security interest, claim or charge upon any property or assets of the Company or any of its subsidiaries pursuant to, any indenture, mortgage, deed of trust, loan agreement 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 charter or by-laws (or analogous governing instruments, as applicable) of the Company or any of its subsidiaries or (iii) result in the violation of any law, statute, rule, regulation, judgment, order or decree of any court or governmental or regulatory agency or body, domestic or foreign, having jurisdiction over the Company or any of its subsidiaries or their properties or assets except, in the case of clauses (i) and (iii) above, for any such conflict, breach, violation or default that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. A “**Debt Repayment Triggering Event**” means any event or condition that gives, or with the giving of notice or lapse of time would give the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder’s behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its subsidiaries.

(q) Except for the registration of the Securities under the Securities Act, and applicable state securities laws, and such consents, approvals, authorizations, orders and registrations or qualifications as may be required by the Financial Industry Regulatory Authority (“**FINRA**”) and The Nasdaq Global Market in connection with the purchase and distribution of the Securities by the Underwriters, no consent, approval, authorization or order of, or filing, qualification or registration (each an “**Authorization**”) with, any court, governmental or regulatory agency or body, foreign or domestic, which has not been made, obtained or taken and is not in full force and effect, is required for the execution, delivery and performance of this Agreement by the Company, the issuance and sale of the Securities or the consummation of the transactions contemplated hereby; and no event has occurred that allows or results in, or after notice or lapse of time or both would allow or result in, revocation, suspension, termination or invalidation of any such Authorization or any other impairment of the rights of the holder or maker of any such Authorization. All corporate approvals (including those of stockholders) necessary for the Company to consummate the transactions contemplated by this Agreement have been obtained and are in effect.

(r) EisnerAmper LLP, who has certified certain financial statements of the Company and its subsidiaries included or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus, is an independent registered public accounting firm with respect to the Company within the meaning of Article 2-01 of Regulation S-X and the Public Company Accounting Oversight Board (United States) (the “**PCAOB**”).

(s) The financial statements, together with the related notes, included or incorporated by reference in the General Disclosure Package, the Prospectus and in the Registration Statement fairly present in all material respects the consolidated financial position of, respectively, the Company and its subsidiaries, and their respective results of operations and changes in cash flows at the respective dates or for the respective periods therein specified. Such statements and related notes have been prepared in accordance with the generally accepted accounting principles in the United States (“**GAAP**”) applied on a consistent basis throughout the periods involved except as may be set forth in the related notes included or incorporated by reference in the General Disclosure Package. The financial statements, together with the related notes, included or incorporated by reference in the General Disclosure Package and the Prospectus comply in all material respects with Regulation S-X. No other financial statements or supporting schedules or exhibits are required by Regulation S-X to be described or included in the Registration Statement, the General Disclosure Package or the Prospectus. The summary and selected financial data included or incorporated by reference in the General Disclosure Package, the Prospectus and the Registration Statement fairly present in all material respects the information shown therein as at the respective dates and for the respective periods specified and are derived from the consolidated financial statements set forth in the Registration Statement, the Pricing Prospectus and the Prospectus. The interactive data in eXtensible Business Reporting Language (“**XBRL**”) included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

(t) The Company and its subsidiaries, taken as a whole, have not sustained, since the date of the latest audited consolidated financial statements included or incorporated by reference in the General Disclosure Package, (i) any material 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 action, order or decree of any court or governmental or regulatory authority, otherwise than as set forth or contemplated in the General Disclosure Package; or (ii) any change in the capital stock (other than the issuance of shares of Common Stock upon exercise of stock options and warrants described as outstanding in, and the grant of options and awards under existing equity incentive plans described in, the Registration Statement, the General Disclosure Package and the Prospectus) or long-term debt of the Company, or any dividend or distribution of any kind declared, set aside for payment, paid or made by the Company on any class of capital stock, or any material adverse changes, or any development involving a prospective material adverse change, in or affecting the business, properties, assets, general affairs, management, financial position, prospects, stockholders’ equity or results of operations of the Company and its subsidiaries taken as a whole, otherwise than as set forth or contemplated in the General Disclosure Package.

(u) Except as set forth in the General Disclosure Package, there is no legal or governmental proceeding 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, including any proceeding before the United States Food and Drug Administration of the U.S. Department of Health and Human Services (“**FDA**”) or comparable federal, state, local or foreign governmental bodies (it being understood that the interaction between the Company and the FDA and such comparable governmental bodies relating to the clinical development and product approval process shall not be deemed proceedings for purposes of this representation), which is required to be described in the Registration Statement, the General Disclosure Package or the Prospectus or a document incorporated by reference therein and is not described therein, or which, singularly or in the aggregate, if determined adversely to the Company, would reasonably be expected to have a Material Adverse Effect; and to the Company’s knowledge, no such proceedings are threatened, by governmental authorities or others. The Company and its subsidiaries are and have been in compliance with all applicable federal, state, local and foreign laws, regulations, orders and decrees governing its business as prescribed by the FDA, or any other federal, state or foreign agencies or bodies engaged in the regulation of pharmaceuticals or biohazardous substances or materials, 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.) and the regulations promulgated thereunder, except where noncompliance would not, singly or in the aggregate, have a Material Adverse Effect. All preclinical and clinical studies conducted by or on behalf of the Company or its subsidiaries to support approval for commercialization of the Company’s products have been conducted by the Company or its subsidiaries, or to the Company’s knowledge by third parties, in compliance with all applicable federal, state or foreign laws, rules, orders and regulations, except for such failure or failures to be in compliance which would not reasonably be expected to have, singly or in the aggregate, a Material Adverse Effect.

(v) The Company and its subsidiaries are not in (i) violation of their respective charters or by-laws (or analogous governing instrument, as applicable), (ii) default in any respect, and no event has occurred which, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement, lease or other agreement or instrument to which they are a party or by which they are bound or to which any of their property or assets is subject or (iii) violation in any respect of any law, ordinance, governmental rule, regulation or court order, decree or judgment to which they or their property or assets may be subject (including, without limitation, those administered by the FDA or by any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA) except, in the case of clauses (ii) and (iii) above, for any such violation or default that would not, singularly or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(w) The Company and its subsidiaries possess all licenses, certificates, exemptions, authorizations, approvals and permits issued by, and have made all declarations and filings with, the appropriate local, state, federal or foreign governmental or regulatory agencies or bodies (including, without limitation, the FDA or by any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA) that are necessary for the ownership or lease of their respective properties or the conduct of their business as described in the General Disclosure Package and the Prospectus (collectively, the “**Governmental Permits**”) except where any failures to possess or make the same would not, singularly or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Company and its subsidiaries are in compliance with all such Governmental Permits and all such Governmental Permits are valid and in full force and effect, except for such non-compliance, validity or failure to be in full force and effect that would not, singularly or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Company and its subsidiaries have not received notification of any revocation, modification, suspension, termination or invalidation (or proceedings related thereto) of any such Governmental Permit and the Company has no reason to believe that any such Governmental Permit will not be renewed. The Company, and to the Company’s knowledge, its and its subsidiaries respective directors, officers, employees or agents, are and have been in compliance in all material respects with applicable federal, state, local and foreign health care regulatory laws, including without limitation, laws related to (1) fraud and abuse, including the Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the civil False Claims Act (31 U.S.C. Section 3729 et seq.), the criminal false claims Law (42 U.S.C. § 1320a-7b(a)), 18 U.S.C. Sections 286 and 287, the health care fraud criminal provisions under the Health Insurance Portability and Accountability Act of 1996 (“**HIPAA**”) (42 U.S.C. Section 1320d et seq.), the exclusion laws (42 U.S.C. § 1320a-7), and the civil monetary penalties law (42 U.S.C. § 1320a-7a); (2) payment transparency, including the Physician Payments Sunshine Act (42 U.S.C. § 1320a-7h); (3) privacy and security of protected health information, including HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act (the “**HITECH Act**”) (42 U.S.C. Section 17921 et seq.); and (4) the Medicare and Medicaid statutes (Titles XVIII and XIX of the Social Security Act); each together with their implementing regulations (collectively, “**Health Care Laws**”). The Company and its subsidiaries have not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any court, arbitrator or governmental or regulatory authority or third party alleging that the Company, any of its subsidiaries or any of their respective personnel has violated any applicable Health Care Law, nor to the Company’s knowledge has any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action been threatened. Neither the Company nor any of its subsidiaries is a party to or has any ongoing reporting obligations pursuant to any corporate integrity agreements, deferred prosecution agreements, monitoring agreements, consent decrees, settlement orders, plans of correction or similar agreements with or imposed by any governmental or regulatory authority. Additionally, none of the Company, any of its subsidiaries or, to the knowledge of the Company, any of their respective employees, officers or directors has been excluded, suspended or debarred from participation in any federal health care program.

(x) The studies, tests and preclinical or clinical trials conducted by or on behalf of the Company and its subsidiaries that are described in the General Disclosure Package and the Prospectus (the “**Company Studies and Trials**”) were and, if still pending, are being, conducted in all material respects in accordance with the experimental protocols established for such studies, test, or trials, and all applicable laws rules and regulations, including without limitation, 21 C.F.R. Parts 50, 54, 56, 58 and 312; the descriptions of the results of the Company Studies and Trials contained in the General Disclosure Package and Prospectus are accurate in all material respects; the Company has no knowledge of any other studies or trials not described in the General Disclosure Package and the Prospectus, the results of which are inconsistent with or call in question the results described or referred to in the General Disclosure Package and the Prospectus; and the Company and its subsidiaries have not received any notices or correspondence with the FDA or any foreign, state or local governmental body exercising comparable authority requiring the termination, suspension or material modification of any Company Studies or Trials that would reasonably be expected to have a Material Adverse Effect and, to the Company’s knowledge, there are no reasonable grounds for the same. In using or disclosing patient information received by the Company in connection with the Company Studies and Trials, the Company and its subsidiaries have complied in all material respects with all applicable laws and regulatory rules or requirements, including, without limitation, the Health Insurance Portability and Accountability Act of 1996 and the rules and regulations thereunder. To the Company’s knowledge, the manufacturing facilities and operations of its suppliers are operated in compliance in all material respects with all applicable statutes, rules, regulations and policies of the FDA and comparable regulatory agencies outside of the United States to which the Company and its subsidiaries are subject.

(y) The Company is not or, after giving effect to the offering of the Securities and the application of the proceeds thereof as described in the General Disclosure Package and the Prospectus, will not be required to register as an “investment company” or an entity “controlled” by an “investment company” within the meaning of the Investment Company Act of 1940, as amended, and the rules and regulations of the Commission thereunder.

(z) Neither the Company, nor any of its subsidiaries, nor any of its or their officers, directors or, to the Company’s knowledge, affiliates, has taken, directly or indirectly, any action designed or intended to stabilize or manipulate the price of any security of the Company, or which caused or resulted in, or which might in the future reasonably be expected to cause or result in, stabilization or manipulation of the price of any security of the Company.

(aa) The Company and its subsidiaries own or possess the right to use all (i) patents, patent applications, trademarks, trademark registrations, service marks, service mark registrations, Internet domain name registrations, copyrights, copyright registrations, licenses, trade secret rights (“**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 its business as currently conducted, and as proposed to be conducted and described in the General Disclosure Package and the Prospectus. The Company and its subsidiaries have not received any opinion from their legal counsel concluding that any of their business activities infringes, misappropriates, or otherwise violates, valid and enforceable Intellectual Property Rights of any other person, and have not received written notice of any challenge, which is to the Company’s knowledge 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 and its subsidiaries. To the Company’s knowledge, the business of the Company and its subsidiaries as now conducted do not give rise to any infringement of, any misappropriation of, or other violation of, any valid and enforceable Intellectual Property Rights of any other person. All licenses for the use of the Company’s Intellectual Property Rights described in the General Disclosure Package and the Prospectus are valid, binding upon, and enforceable by or against the Company and its subsidiaries, and to the Company’s knowledge, the other parties thereto in accordance with its terms in all material respects. The Company and its subsidiaries have complied in all material respects with, and are not in breach nor have received any asserted or threatened claim of breach of any Intellectual Property license, and the Company has no knowledge of any breach or anticipated breach by any other person of any Intellectual Property license. Except as described in the General Disclosure Package, no claim has been made or is pending against the Company or any of its subsidiaries alleging the infringement by the Company or its subsidiaries of any patent, trademark, service mark, trade name, copyright, trade secret, license in or other intellectual property right or franchise right of any person. The Company and its subsidiaries have taken all reasonable steps to protect, maintain and safeguard their Intellectual Property Rights, including the execution of appropriate nondisclosure and confidentiality agreements. The consummation of the transactions contemplated by this Agreement 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. The Company and its subsidiaries have taken all reasonable actions to obtain ownership of all works of authorship and inventions made by their employees, consultants and contractors during the time they were employed by them or under contract with them and which relate to the Company and its subsidiaries’ business. All key employees have signed confidentiality and invention assignment agreements with the Company and its subsidiaries.

(bb) The Company and its subsidiaries have good and marketable title in fee simple (in the case of real property) to, or have valid and marketable rights to lease or otherwise use, all items of real or personal property, other than with respect to intellectual property assets which are addressed exclusively in Section 2(aa) above, which are material to the business of the Company and its subsidiaries taken as a whole, in each case free and clear of all liens, encumbrances, security interests, claims and defects that do not, singularly or in the aggregate, materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company or its subsidiaries; and all of the leases and subleases material to the business of the Company and its subsidiaries, and under which the Company and its subsidiaries hold properties described in the General Disclosure Package and the Prospectus, are in full force and effect in all material respects and the Company and its subsidiaries have not received any notice of any material claim of any sort that has been asserted by anyone adverse to the rights of the Company or its subsidiaries under any of the leases or subleases mentioned above, or affecting or questioning the rights of the Company or its subsidiaries to the continued possession of the leased or subleased premises under any such lease or sublease.

(cc) There is (A) no unfair labor practice complaint pending against the Company or any of its subsidiaries, nor to the Company's knowledge, threatened against it or any of its subsidiaries, before the National Labor Relations Board, any state or local labor relation board or any foreign labor relations board, and no significant grievance or significant arbitration proceeding arising out of or under any collective bargaining agreement is so pending against the Company or its subsidiaries, or, to the Company's knowledge, threatened against it or any of its subsidiaries and (B) no labor disturbance by or dispute with, employees of the Company or any of its subsidiaries exists or, to the Company's knowledge, is contemplated or threatened, and the Company is not aware of any existing or imminent labor disturbance by the employees of any of its principal suppliers, manufacturers, customers or contractors, that would be expected, singularly or in the aggregate, to have a Material Adverse Effect. The Company is not aware that any key employee or significant group of employees of the Company or any of its subsidiaries plans to terminate employment with the Company or any such subsidiary.

(dd) No "prohibited transaction" (as defined in Section 406 of the Employee Retirement Income Security Act of 1974, as amended, including the regulations and published interpretations thereunder ("**ERISA**"), or Section 4975 of the Internal Revenue Code of 1986, as amended from time to time (the "**Code**")) or "accumulated funding deficiency" (as defined in Section 302 of ERISA) or any of the events set forth in Section 4043(b) of ERISA (other than events with respect to which the thirty (30)-day notice requirement under Section 4043 of ERISA has been waived) has occurred or would reasonably be expected to occur with respect to any employee benefit plan of the Company or its subsidiaries which would, singularly or in the aggregate, reasonably be expected to have a Material Adverse Effect. Each employee benefit plan of the Company and its subsidiaries is in compliance in all material respects with applicable law, including ERISA and the Code. The Company and its subsidiaries have not incurred and would not reasonably be expected to incur liability under Title IV of ERISA with respect to the termination of, or withdrawal from, any pension plan (as defined in ERISA). Each pension plan for which the Company or its subsidiaries would have any liability that is intended to be qualified under Section 401(a) of the Code is so qualified, and to the Company's knowledge, nothing has occurred, whether by action or by failure to act, which would, singularly or in the aggregate, reasonably be expected to cause the loss of such qualification.

(ee) The Company and its subsidiaries are in compliance in all material respects with all foreign, federal, state and local rules, laws and regulations relating to the use, treatment, storage and disposal of hazardous or toxic substances or waste and protection of health and safety or the environment which are applicable to the Company's and its subsidiaries' business ("**Environmental Laws**"). There has been no storage, generation, transportation, handling, treatment, disposal, discharge, emission, or other release of any kind of toxic or other wastes or other hazardous substances by, due to, or caused by the Company or any of its subsidiaries (or, to the Company's knowledge, any other entity for whose acts or omissions the Company or any of its subsidiaries is or may otherwise be liable) upon any of the property now or previously owned or leased by the Company or its subsidiaries, or upon any other property, in violation of any law, statute, ordinance, rule, regulation, order, judgment, decree or permit or which would, under any law, statute, ordinance, rule (including rule of common law), regulation, order, judgment, decree or permit, give rise to any liability; and there has been no disposal, discharge, emission or other release of any kind onto such property or into the environment surrounding such property of any toxic or other wastes or other hazardous substances.

(ff) The Company and its subsidiaries (i) have timely filed all necessary federal, state, local and foreign tax returns (or timely filed extensions with respect to such returns), and all such returns were true, complete and correct, (ii) have paid all federal, state, local and foreign taxes, assessments, governmental or other charges due and payable for which they are liable, including, without limitation, all sales and use taxes and all taxes which they are obligated to withhold from amounts owing to employees, creditors and third parties, and (iii) do not have any tax deficiency or claims outstanding or assessed or, to the Company's knowledge, proposed against any of them, except those, in each of the cases described in clauses (i), (ii) and (iii) above, that would not, singularly or in the aggregate, reasonably be expected to have a Material Adverse Effect. The Company and its subsidiaries have not engaged in any transaction which is a corporate tax shelter or which could be characterized as such by the Internal Revenue Service or any other taxing authority. The accruals and reserves on the books and records of the Company and its subsidiaries in respect of tax liabilities for any taxable period not yet finally determined are adequate to meet any assessments and related liabilities for any such period, and since December 31, 2017 the Company and its subsidiaries have not incurred any liability for taxes other than in the ordinary course.

(gg) The Company and its subsidiaries carry or are covered by, insurance in such amounts and covering such risks as they reasonably believe is adequate for the conduct of the Company's and its subsidiaries' business and the value of their properties and as is customary for companies engaged in similar businesses in similar industries. The Company and its subsidiaries do not have any reason to believe that they will not be able to renew their existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue their business at a cost that would not reasonably be expected to have a Material Adverse Effect. All policies of insurance owned by the Company and its subsidiaries are, to the Company's knowledge, in full force and effect and the Company and its subsidiaries are in compliance in all material respects with the terms of such policies. The Company and its subsidiaries have not received written notice from any insurer, agent of such insurer or the broker that any material capital improvements or any other material expenditures (other than premium payments) are required or necessary to be made in order to continue such insurance. Except for customary deductibles, the Company and its subsidiaries do not insure risk of loss through any captive insurance, risk retention group, reciprocal group or by means of any fund or pool of assets specifically set aside for contingent liabilities other than as described in the General Disclosure Package.

(hh) The Company maintains a system of "internal control over financial reporting" (as such term is defined in Rule 13a-15(f) of the General Rules and Regulations under the Exchange Act (the "**Exchange Act Rules**")) that is designed to comply with the requirements of the Exchange Act and has been designed by its principal executive and principal financial officers, or under their supervision, to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; (iv) the recorded accountability for 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 Registration Statement is in conformity with generally accepted accounting principles and is updated as necessary to comply in all material respects with the requirements of the Securities Act, the Rules and Regulations and guidelines applicable thereto and the Exchange Act and present fairly the financial position, results of operations and changes in financial position of the Company on the basis stated in the Registration Statement at the respective dates or for the respective periods to which they apply. There has been (A) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (B) no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company's internal control over financial reporting is overseen by the Audit Committee of the Board of Directors of the Company (the "**Audit Committee**") in accordance with the Exchange Act Rules. Except as described in the General Disclosure Package and the Prospectus, the Company has not publicly disclosed or reported to the Audit Committee or to the Board, and within the next 90 days the Company does not reasonably expect to publicly disclose or report to the Audit Committee or the Board, material weakness, change in internal control over financial reporting or fraud involving management or other employees who have a significant role in the internal control over financial reporting (each an "**Internal Control Event**") or any material violation of, or failure to comply in all material respects with, U.S. federal securities laws.

(ii) A member of the Audit Committee has confirmed to the Chief Executive Officer or Principal Financial Officer of the Company that, except as set forth in the General Disclosure Package, the Audit Committee is not reviewing or investigating, and neither the Company's independent auditors nor its internal auditors is currently recommending that the Audit Committee review or investigate, (i) adding to, deleting, changing the application of or changing the Company's disclosure with respect to, any of the Company's material accounting policies, (ii) any matter which could result in a restatement of the Company's financial statements for any annual or interim period during the current or prior three fiscal years, or (iii) any Internal Control Event.

(jj) The Company maintains disclosure controls and procedures (as such is defined in Rule 13a-15(e) of the Exchange Act Rules) that are designed to comply with the requirements of the Exchange Act; such disclosure controls and procedures have been designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms, including controls and procedures designed to ensure that such information is accumulated and communicated to the Company's management to allow timely decisions regarding disclosures. The Company has conducted evaluations of the effectiveness of their disclosure controls as required by Rule 13a-15 of the Exchange Act.

(kk) The minute books of the Company have been made available to counsel for the Underwriters, and such books (i) contain a complete summary in all material respects of all meetings and actions of the board of directors (including each board committee) and stockholders of the Company (or analogous governing bodies and interest holders, as applicable) since the time of its incorporation or organization through the date of the latest meeting and action, and (ii) accurately in all material respects reflect all transactions referred to in such minutes.

(ll) There is no franchise agreement, lease, contract, or other agreement or document required by the Securities Act or by the Rules and Regulations to be described in the General Disclosure Package or to be filed as an exhibit to the Registration Statement which is not so described or filed therein as required; and all descriptions of any such franchise agreements, leases, contracts, or other agreements or documents contained in the General Disclosure Package are accurate and complete descriptions of such documents in all material respects. Other than as described in the General Disclosure Package, no such franchise agreement, lease, contract or other agreement has been suspended or terminated for convenience or default by the Company, its subsidiaries or any of the other parties thereto, and the Company and its subsidiaries have not received notice of and do not have knowledge of any such pending or threatened suspension or termination.

(mm) No relationship, direct or indirect, exists between or among the Company or any of its subsidiaries on the one hand, and the directors, officers, stockholders (or analogous interest holders), customers or suppliers of the Company or its subsidiaries or any of its affiliates on the other hand, which is required to be described in the General Disclosure Package and the Prospectus and which is not so described.

(nn) No person or entity has the right to require registration of shares of Common Stock or other securities of the Company because of the filing or effectiveness of the Registration Statement or otherwise, except for persons and entities who have expressly waived such right in writing or who have been given timely and proper written notice and have failed to exercise such right within the time or times required under the terms and conditions of such right. Except as described in the General Disclosure Package, there are no persons with registration rights or similar rights to have any securities registered by the Company under the Securities Act.

(oo) The Company does not own any “margin securities” as that term is defined in Regulation U of the Board of Governors of the Federal Reserve System (the “**Federal Reserve Board**”), and none of the proceeds of the sale of the Securities will be used, directly or indirectly, for the purpose of purchasing or carrying any margin security, for the purpose of reducing or retiring any indebtedness which was originally incurred to purchase or carry any margin security or for any other purpose which might cause any of the Securities to be considered a “purpose credit” within the meanings of Regulation T, U or X of the Federal Reserve Board.

(pp) Other than this Agreement, 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 the Company or the Underwriters for a brokerage commission, finder’s fee or like payment in connection with the offering and sale of the Securities or any transaction contemplated by this Agreement, the Registration Statement, the General Disclosure Package or the Prospectus.

(qq) The exercise price of each option issued under the stock option or other employee benefit plans of the Company and its subsidiaries has been no less than the fair market value of a share of Common Securities as determined on the date of grant of such option. All grants of options were validly issued and properly approved by the board of directors of the Company (or a duly authorized committee thereof) in material compliance with all applicable laws and regulations and recorded in the Company’s consolidated financial statements in accordance with GAAP and, to the Company’s knowledge, no such grants involved “back dating,” “forward dating” or similar practice with respect to the effective date of grant.

(rr) Since the date as of which information is given in the General Disclosure Package through the date hereof, and except for the obligations created by this Agreement and as set forth in the Pricing Prospectus or as disclosed in the General Disclosure Package, the Company and its subsidiaries, as applicable, have not (i) issued or granted any securities other than shares of Common Stock issued or issuable upon the conversion of the Company’s outstanding preferred stock and options to purchase common stock pursuant to the Company’s stock option plan, (ii) incurred any material liability or obligation, direct or contingent, other than liabilities and obligations which were incurred in the ordinary course of business, (iii) entered into any material transaction other than in the ordinary course of business or (iv) declared or paid any dividend on its capital stock.



(ss) If applicable, all of the information provided to the Underwriters or to counsel for the Underwriters by the Company, its officers and directors and the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with letters, filings or other supplemental information provided to FINRA pursuant to FINRA Rule 5110 or 5121 is, to the Company's knowledge with respect to all other persons except for the Company, true, correct and complete in all material respects as of the date hereof.

(tt) No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) contained in either the General Disclosure Package or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(uu) The Company is subject to and in compliance in all material respects with the reporting requirements of Section 13 or Section 15(d) of the Exchange Act. The Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act and is listed on The Nasdaq Global Market, and 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 Exchange, nor has the Company received any notification that the Commission or the FINRA is contemplating terminating such registration or listing.

(vv) There is and has been no failure on the part of the company or, to the Company's knowledge, any of the Company's officers or directors, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith (the "**Sarbanes-Oxley Act**"), including Section 402 related to loans and Sections 302 and 906 related to certifications.

(ww) None of the Company, any of its subsidiaries or, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries is aware of or has taken any action, directly or indirectly, that would result in a violation by such persons of the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder (the "**FCPA**"), including, without limitation, making use of the mails or any means or instrumentality of interstate commerce corruptly in furtherance of an offer, payment, promise to pay or authorization of the payment of any money, or other property, gift, promise to give, or authorization of the giving of anything of value to any "foreign official" (as such term is defined in the FCPA) or any foreign political party or official thereof or any candidate for foreign political office, in contravention of the FCPA; and the Company and, to the knowledge of the Company, its affiliates have conducted their businesses in compliance with the FCPA, and have instituted and maintained and will continue to institute and maintain policies and procedures reasonably designed to promote and achieve compliance therewith.

(xx) There are no transactions, arrangements or other relationships between and/or among the Company, its subsidiaries or any of its affiliates (as such term is defined in Rule 405 of the Rules and Regulations) and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity that would reasonably be expected to materially affect the Company's liquidity or the availability of or requirements for its capital resources required to be described in the General Disclosure Package and the Prospectus which have not been described as required.

(yy) There are no outstanding loans, advances (except normal advances for business expenses in the ordinary course of business) or guarantees of indebtedness by the Company and its subsidiaries to or for the benefit of any of the officers or directors of the Company or its subsidiaries or any of their respective family members, except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus. All transactions by the Company and its subsidiaries with office holders or control persons of the Company and its subsidiaries have been duly approved by the board of directors of the Company and its subsidiaries, or duly appointed committees or officers thereof, if and to the extent required under U.S. law.

(zz) The statistical and market related data included or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus are based on or derived from sources that the Company believes to be reliable and accurate, and such data agree with the sources from which they are derived.

(aaa) 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 U.S. 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 related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency in jurisdictions where the Company and its subsidiaries conduct business (collectively, the "**Anti-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 Anti-Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(bbb) None of the Company, any of its subsidiaries or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or representative of the Company or any of its subsidiaries is an individual or entity ("**Person**") that is, or is owned or controlled by one or more Persons that are, currently the subject or target of any sanctions administered or enforced by the United States government, including, without limitation, the U.S. Department of the Treasury's Office of Foreign Assets Control, the United Nations Security Council, the European Union, His Majesty's Treasury, or other relevant sanctions authority (collectively, "**Sanctions**"), nor is the Company located, organized or resident in a country or territory that is the subject of Sanctions; and the Company will not directly or indirectly use the proceeds of the sale of the Securities, or lend, contribute or otherwise make available such proceeds to any subsidiaries, joint venture partners or other Person, (i) to fund any activities of or business with any Person, or in any country or territory, that, at the time of such funding, is the subject of Sanctions or (ii) in any other manner that will result in a violation by any Person (including any Person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions. For the past five years, the Company and its subsidiaries have not knowingly engaged in, are not now knowingly engaged in, and will not engage in, any dealings or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(ccc) Neither the Company nor any of its subsidiaries nor, to the Company's knowledge, any of its affiliates (within the meaning of FINRA Rule 5121(f)(1)) directly or indirectly controls, is controlled by, or is under common control with, or is an associated person (within the meaning of Article I, Section 1(rr) of the By-Laws of FINRA) of, any of the Underwriters.

(ddd) Except as described in the General Disclosure Package and the Prospectus, no subsidiary of the Company is currently prohibited, directly or indirectly, under any agreement or other instrument to which it is a party or is subject, from paying any dividends to the Company, from making any other distribution on such subsidiary's capital stock, from repaying to the Company any loans or advances to such subsidiary from the Company or from transferring any of such subsidiary's properties or assets to the Company or any other subsidiary of the Company.

(eee) (i)(x) There has been no security breach or attack or other compromise of or relating to any of the Company's and its subsidiaries' information technology and computer systems, networks, hardware, software, data (including the data of their respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of them), equipment or technology ("**IT Systems and Data**") and (y) the Company and its subsidiaries have not been notified of, and have no knowledge of any event or condition that would reasonably be expected to result in, any security breach, attack or compromise to their IT Systems and Data, (ii) the Company and its subsidiaries have complied, and are presently in compliance, with, all applicable laws, statutes or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority and all industry guidelines, standards, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, and (iii) the Company and its subsidiaries have implemented backup and disaster recovery technology consistent with industry standards and practices, except, in each case with respect to clauses (i) through (iii) hereof, as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(fff) Neither the Company nor any of its subsidiaries has any securities rated by any "nationally recognized statistical rating organization," as such term is defined in Section 3(a)(62) of the Exchange Act.

(ggg) The Company and each of its subsidiaries are, and at all prior times since January 1, 2010 were, in material compliance with all applicable data privacy and security laws and regulations (collectively, "**Privacy Laws**"). The Company and each of its subsidiaries have in place, comply with, and take appropriate steps reasonably designed to ensure compliance in all material respects with their policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling and analysis of Personal Data (as defined below) (the "**Policies**"). Where required by applicable Privacy Laws, the Company provides accurate notice of its Policies to data subjects from whom it collects Personal Data. The Policies provide accurate and sufficient notice of the Company's then-current privacy practices relating to its subject matter and such Policies do not contain any material omissions of the Company's then-current privacy practices. "**Personal Data**" means (i) a natural persons' name, street address, telephone number, email address, photograph, social security number, bank information, or customer or account number; (ii) any information which would qualify as "personally identifying information" under the Federal Trade Commission Act, as amended; (iii) Protected Health Information as defined by HIPAA; (iv) "personal data" as defined by GDPR; and (v) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any data related to an identified person's health or sexual orientation. None of such disclosures made or contained in any of the Policies have been inaccurate, misleading, deceptive or in violation of any Privacy Laws or Policies in any material respect. The execution, delivery and performance of this Agreement or any other agreement referred to in this Agreement will not result in a material breach of any Privacy Laws or Policies. Neither the Company nor any of its subsidiaries, (i) has received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is currently conducting or paying for, in whole or in part, any investigation, remediation or other corrective action pursuant to any Privacy Law; or (iii) is a party to any order, decree, or agreement that imposed any obligation or liability under any Privacy Law.

(hhh) The Warrants have been duly authorized and, when executed and delivered by the Company in accordance with this Agreement, will be valid and legally binding agreements of the Company, enforceable against the Company in accordance with their terms except as the enforcement thereof maybe limited by applicable bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting the rights and remedies of creditors or by general equitable principles. The Warrant Stock to be issued by the Company upon exercise of the Warrants in accordance therewith have been duly authorized and will be reserved for issuance upon exercise of the Warrants in a number sufficient to meet the current exercise requirements. The Warrant Stock, when issued and delivered upon exercise of the Warrants in accordance therewith, will be validly issued, fully paid and nonassessable, and the issuance of the Warrant Stock is not subject to any preemptive or similar rights not otherwise validly waived or satisfied.

Any certificate signed by or on behalf of the Company and delivered to the Representatives or to counsel for the Underwriters shall be deemed to be a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

3. **PURCHASE, SALE AND DELIVERY OF OFFERED SECURITIES.** On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company agrees to sell to the Underwriters, and the Underwriters agree, severally and not jointly, to purchase from the Company the respective numbers of shares of Firm Securities set forth opposite the names of the Underwriters in Schedule A hereto.

The purchase price per share to be paid by the Underwriters to the Company for the Stock will be \$15.04 per share (the "**Purchase Price**") and the purchase price per Warrant to be paid by the Underwriters to the Company for the Warrant will be \$15.03 per Warrant (the "**Warrant Purchase Price**").

The Company will deliver the Firm Securities to the Representatives for the respective accounts of the several Underwriters, through the facilities of The Depository Trust Company, in each such case, issued in such names and in such denominations as the Representatives may direct by notice in writing to the Company given at or prior to 12:00 Noon, New York time, at least one full business day preceding the Closing Date against payment of the aggregate Purchase Price or Warrant Purchase Price, as applicable, therefor by wire transfer in federal (same day) funds to an account specified by the Company payable to the order of the Company for the Firm Stock sold by them all at the offices of Latham & Watkins LLP, 1271 Avenue of the Americas, New York, New York 10020. Time shall be of the essence, and delivery at the time and place specified pursuant to this Agreement is a further condition of the obligations of each Underwriter hereunder. The time and date of the delivery and closing shall be at 10:00 A.M., New York time, on September 15, 2023, in accordance with Rule 15c6-1 of the Exchange Act. The time and date of such payment and delivery are herein referred to as the "**Closing Date**." The Closing Date and the location of delivery of, and the form of payment for, the Firm Securities may be varied by agreement between the Company and the Representatives.

The Underwriters may purchase all or less than all of the Optional Stock. The price per share to be paid for the Optional Stock shall be the Purchase Price, less an amount per share equal to any dividends or distributions declared by the Company and payable on the Firm Stock but not payable on the Optional Stock. The Company agrees to sell to the Underwriters the number of shares of Optional Stock specified in the written notice delivered by the Representatives to the Company described below and the Underwriters agree, severally and not jointly, to purchase such shares of Optional Stock. Such shares of Optional Stock shall be purchased from the Company for the account of each Underwriter in the same proportion as the number of shares of Firm Stock set forth opposite such Underwriter's name on Schedule A bears to the total number of shares of Firm Stock (subject to adjustment by the Representatives to eliminate fractions). The option granted hereby may be exercised as to all or any part of the Optional Stock at any time, and from time to time, not more than thirty (30) days subsequent to the date of this Agreement. No Optional Stock shall be sold and delivered unless the Firm Stock previously has been, or simultaneously is, sold and delivered. The right to purchase the Optional Stock or any portion thereof may be surrendered and terminated at any time upon notice by the Representatives to the Company.

The option granted hereby may be exercised by written notice being given to the Company by the Representatives setting forth the number of shares of the Optional Stock to be purchased by the Underwriters and the date and time for delivery of and payment for the Optional Stock. Each date and time for delivery of and payment for the Optional Stock (which may be the Closing Date, but not earlier) is herein called an “**Option Closing Date**” and shall in no event be earlier than two (2) business days nor later than five (5) business days after written notice is given. The Option Closing Date or Dates, if any, and the Closing Date are herein called the “**Closing Dates**.”

The Company will deliver the Optional Stock to the Representatives for the respective accounts of the several Underwriters through the facilities of The Depository Trust Company or, at the election of the Representatives, in the form of definitive certificates, in each such case, issued in such names and in such denominations as the Representatives may direct by notice in writing to the Company given at or prior to 12:00 Noon, New York time, at least one full business day preceding the Option Closing Date against payment of the aggregate Purchase Price therefor by wire transfer in federal (same day) funds to an account at a bank specified by the Company payable to the order of the Company, at the offices of Latham & Watkins LLP, 1271 Avenue of the Americas, New York, New York 10020. Time shall be of the essence, and delivery at the time and place specified pursuant to this Agreement is a further condition of the obligations of each Underwriter hereunder. The Option Closing Date and the location of delivery of, and the form of payment for, the Optional Stock may be varied by agreement between the Company and the Representatives.

Notwithstanding the foregoing, the Company and the Representatives shall instruct purchasers of the Warrants in the public offering to make payment for the Warrants on the Closing Date to the Company by wire transfer in immediately available funds to the account specified by the Company at a purchase price of \$15.99 per Warrant, in lieu of payment by the Underwriters for such Warrants, and the Company shall deliver such Warrants to such purchasers on the Closing Date in definitive form against such payment, in lieu of the Company’s obligation to deliver such Warrants to the Underwriters; provided that, the underwriting discounts and commissions in respect of the Warrants, as calculated by subtracting the Warrant Purchase Price from the Offering Price of Warrants set forth on Schedule C hereto, shall be deducted and withheld from the amount otherwise payable by the Representatives to the Company for the Stock as set forth in this Section 3. The Warrants will be made available for inspection by the Representative on the day prior to the Closing Date.

In the event that the purchasers of the Warrants in the public offering fail to make payment to the Company for all or part of the Warrants on the Closing Date, the Representatives may elect, by written notice to the Company, to receive shares of Common Stock in lieu of all or a portion of such Warrants to be delivered to the Underwriters under this Agreement.

The several Underwriters propose to offer the Securities for sale upon the terms and conditions set forth in the Prospectus.

4. **FURTHER AGREEMENTS OF THE COMPANY.** The Company agrees with the several Underwriters:

(a) To prepare the Rule 462(b) Registration Statement, if necessary, in a form approved by the Representatives and file such Rule 462(b) Registration Statement with the Commission by 10:00 P.M., New York time, on the date hereof, and the Company shall at the time of filing either pay to the Commission the filing fee for the Rule 462(b) Registration Statement or give irrevocable instructions for the payment of such fee pursuant to Rule 111(b) under the Rules and Regulations; to prepare the Prospectus in a form approved by the Representatives containing information previously omitted at the time of effectiveness of the Registration Statement in reliance on Rules 430A or 430B of the Rules and Regulations and to file such Prospectus pursuant to Rule 424(b) of the Rules and Regulations not later than the second business (2nd) day following the execution and delivery of this Agreement or, if applicable, such earlier time as may be required by the Securities Act; to notify the Representatives promptly of the Company’s intention to file or prepare any supplement or amendment to the Registration Statement or to the Prospectus and to make no amendment or supplement to the Registration Statement, the General Disclosure Package or to the Prospectus to which the Representatives shall reasonably object by notice to the Company after a reasonable period to review; to advise the Representatives, promptly after it receives notice thereof, of the time when any amendment to the Registration Statement has been filed or becomes effective or any supplement to the General Disclosure Package or the Prospectus or any amended Prospectus or any Issuer Free Writing Prospectus has been filed and to furnish the Underwriters with copies thereof; to file promptly all material required to be filed by the Company with the Commission pursuant to Rules 433(d) or 163(b)(2) of the Rules and Regulations, as the case may be; to file promptly all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the date of the Prospectus and for so long as the delivery of a prospectus (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules and Regulations) is required in connection with the offering or sale of the Securities; to advise the Representatives, promptly after it receives notice thereof, of the issuance by the Commission of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus, any Issuer Free Writing Prospectus or the Prospectus, of the suspension of the qualification of the Securities for offering or sale in any jurisdiction, of the initiation or threatening of any proceeding for any such purpose, or of any request by the Commission for the amending or supplementing of the Registration Statement, the General Disclosure Package or the Prospectus or for additional information; and, in the event of the issuance of any stop order or of any order preventing or suspending the use of any Preliminary Prospectus, any Issuer Free Writing Prospectus or the Prospectus or suspending any such qualification, and promptly to use its commercially reasonable efforts to obtain the withdrawal of such order.

(b) [Reserved].

(c) The Company represents and agrees that, unless it obtains the prior consent of the Representatives, and each Underwriter represents and agrees that, unless it obtains the prior consent of the Company and the Representatives, it has not made and will not, make any offer relating to the Securities that would constitute a “free writing prospectus” as defined in Rule 405 of the Rules and Regulations (each, a “**Permitted Free Writing Prospectus**”); *provided* that the prior written consent of the Representatives hereto shall be deemed to have been given in respect of the Issuer Free Writing Prospectuses included in Schedule B hereto. The Company represents that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an Issuer Free Writing Prospectus, comply with the requirements of Rules 164 and 433 of the Rules and Regulations applicable to any Issuer Free Writing Prospectus, including the requirements relating to timely filing with the Commission, legending and record keeping and will not take any action that would result in an Underwriter or the Company being required to file with the Commission pursuant to Rule 433(d) of the Rules and Regulations a free writing prospectus prepared by or on behalf of such Underwriter that such Underwriter otherwise would not have been required to file thereunder.

(d) If at any time prior to the date when a prospectus relating to the Securities is required to be delivered (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules and Regulations) any event occurs or condition exists as a result of which the Prospectus as then amended or supplemented would include any untrue statement of a material fact, or omit to state any material fact necessary to make the statements therein, in light of the circumstances under which they were made when the Prospectus is delivered (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules and Regulations), not misleading, or if it is necessary at any time to amend or supplement the Registration Statement or to file under the Exchange Act any document incorporated by reference in the Prospectus to comply with the Securities Act, that the Company will promptly notify the Representatives thereof and upon their request will prepare an appropriate amendment or supplement or upon their request make an appropriate filing pursuant to Section 13 or 14 of the Exchange Act in form and substance satisfactory to the Representatives which will correct such statement or omission or effect such compliance and will use its commercially reasonable efforts to have any amendment to the Registration Statement declared effective as soon as possible. The Company will furnish without charge to each Underwriter and to any dealer in securities as many copies as the Representatives may from time to time reasonably request of such amendment or supplement. In case any Underwriter is required to deliver a prospectus (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules and Regulations) relating to the Securities, the Company upon the request of the Representatives will prepare promptly an amended or supplemented Prospectus as may be necessary to permit compliance with the requirements of Section 10(a)(3) of the Securities Act and deliver to such Underwriter as many copies as such Underwriter may request of such amended or supplemented Prospectus complying with Section 10(a)(3) of the Securities Act.

(e) If the General Disclosure Package is being used to solicit offers to buy the Securities at a time when the Prospectus is not yet available to prospective purchasers and any event shall occur as a result of which, in the judgment of the Company or in the reasonable opinion of the Underwriters, it becomes necessary to amend or supplement the General Disclosure Package in order to make the statements therein, in the light of the circumstances then prevailing, not misleading, or to make the statements therein not conflict with the information contained or incorporated by reference in the Registration Statement then on file and not superseded or modified, or if it is necessary at any time to amend or supplement the General Disclosure Package to comply with any law, the Company promptly will either (i) prepare, file with the Commission (if required) and furnish to the Underwriters and any dealers an appropriate amendment or supplement to the General Disclosure Package or (ii) prepare and file with the Commission an appropriate filing under the Exchange Act which shall be incorporated by reference in the General Disclosure Package so that the General Disclosure Package as so amended or supplemented will not, in the light of the circumstances then prevailing, be misleading or conflict with the Registration Statement then on file, or so that the General Disclosure Package will comply with law.

(f) If at any time following issuance of an Issuer Free Writing Prospectus there occurred or occurs an event or development as a result of which such Issuer Free Writing Prospectus conflicted or will conflict with the information contained in the Registration Statement, Pricing Prospectus or Prospectus, including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof and not superseded or modified or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances prevailing at the subsequent time, not misleading, the Company has promptly notified or will promptly notify the Representatives so that any use of the Issuer Free Writing Prospectus may cease until it is amended or supplemented and has promptly amended or will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriters' Information.

(g) To the extent not available on the Commission's Electronic Data Gathering, Analysis and Retrieval system or any successor system ("**EDGAR**"), upon the request of the Representatives, to furnish promptly to the Representatives and to counsel for the Underwriters a signed copy of the Registration Statement as originally filed with the Commission, and of each amendment thereto filed with the Commission, including all consents and exhibits filed therewith.

(h) Upon request of the Representatives, to the extent not available on EDGAR, to deliver promptly to the Representatives in New York City such number of the following documents as the Representatives shall reasonably request: (i) conformed copies of the Registration Statement as originally filed with the Commission (excluding exhibits), (ii) each Preliminary Prospectus, (iii) any Issuer Free Writing Prospectus, (iv) the Prospectus (the delivery of the documents referred to in clauses (i), (ii), (iii) and (iv) of this paragraph (i) to be made not later than 10:00 A.M., New York time, on the business day following the execution and delivery of this Agreement), (v) conformed copies of any amendment to the Registration Statement (excluding exhibits), (vi) any amendment or supplement to the General Disclosure Package or the Prospectus (the delivery of the documents referred to in clauses (v) and (vi) of this paragraph (i) to be made not later than 10:00 A.M., New York City time, on the business day following the date of such amendment or supplement) and (vii) any document incorporated by reference in the General Disclosure Package or the Prospectus (excluding exhibits thereto) (the delivery of the documents referred to in clause (vi) of this paragraph (i) to be made not later than 10:00 A.M., New York City time, on the business day following the date of such document).

(i) To make generally available to its stockholders as soon as practicable, but in any event not later than sixteen (16) months after the effective date of the Registration Statement (as defined in Rule 158(c) of the Rules and Regulations), an earnings statement of the Company and its subsidiaries (which need not be audited) complying with Section 11(a) of the Securities Act (including, at the option of the Company, Rule 158). The Company, during the period when a Prospectus relating to the Securities is (or, but for the exception afforded by Rule 172 of the Rules and Regulations, would be) required to be delivered under the Securities Act, will file all documents required to be filed with the Commission pursuant to the Exchange Act within the time periods required by the Exchange Act and the rules and regulations promulgated thereunder.

(j) To take promptly from time to time such actions as the Representatives may reasonably request to qualify the Securities for offering and sale under the securities or Blue Sky laws of such jurisdictions (domestic or foreign) as the Representatives may designate and to continue such qualifications in effect, and to comply with such laws, for so long as required to permit the offer and sale of Securities in such jurisdictions; *provided* that neither the Company nor any of its subsidiaries shall be obligated to (i) qualify as a foreign corporation in any jurisdiction in which it is not so qualified, (ii) file a general consent to service of process in any jurisdiction or (iii) subject itself to taxation in any such jurisdiction if it is not otherwise so subject.

(k) Upon request, during the period of five (5) years from the date hereof, to deliver to each of the Underwriters, (i) as soon as they are available, copies of all reports or other communications (financial or other) furnished to stockholders, and (ii) as soon as they are available, copies of any reports and financial statements furnished or filed with the Commission or any national securities exchange on which the Securities are listed. However, so long as the Company is subject to the reporting requirements of either Section 13 or Section 15(d) of the Exchange Act and is timely filing reports with the Commission on EDGAR, it is not required to furnish such reports or statements to the Underwriters.

(l) During the period commencing on and including the date hereof and ending on and including the ninetieth (90th) day following the date of this Agreement (as the same may be extended as described below, the “**Lock-Up Period**”) the Company will not, without the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC (which consent may be withheld at the sole discretion of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC), directly or indirectly offer, sell (including, without limitation, any short sale), assign, transfer, lend, pledge, contract to sell, establish an open “put equivalent position” within the meaning of Rule 16a-1(h) under the Exchange Act, or otherwise dispose of, or announce the offering of, or file any registration statement under the Securities Act in respect of, any Common Stock, options, rights or warrants to acquire Common Stock or securities exchangeable or exercisable for or convertible into Common Stock (other than as contemplated by this Agreement with respect to the Securities) or publicly announce any intention to do any of the foregoing; *provided*, however, that the Company may (i) sell the Securities, including, for the avoidance of doubt, the issuance by the Company of Warrant Shares upon the exercise of the Warrants, pursuant to this Agreement and as otherwise disclosed in the General Disclosure Package, (ii) issue Common Stock and options to purchase Common Stock, shares of Common Stock underlying options granted, and other securities, each pursuant to any director or employee stock option plan, stock ownership plan or dividend reinvestment plan of the Company in effect on the date hereof and described in the General Disclosure Package, (iii) issue Common Stock pursuant to the conversion of securities or the exercise of warrants, which securities or warrants are outstanding on the date hereof and described in the General Disclosure Package; (iv) file a registration statement on Form S-8 relating to shares of Common Stock granted pursuant to the Company’s equity incentive plans in effect as of the date hereof; or (v) issue Common Stock or securities convertible into or exercisable for shares of Common Stock in connection with any acquisition, collaboration, licensing, consulting arrangement or other strategic transaction or any debt financing transaction; *provided*, that in the case of this clause (v), such issuances shall not be greater than 10% of the total outstanding shares of Common Stock outstanding immediately after the completion of this offering (after giving effect to the Warrant Shares issuable upon exercise of the Warrants) and each recipient of shares of Common Stock, or securities exchangeable or exercisable for or convertible into Common Stock, shall be contractually prohibited, pursuant to an agreement substantially in the form of Exhibit I hereto, from selling, offering, disposing of or otherwise transferring any such shares or securities during the remainder of the Lock-Up Period.

(m) To supply the Representatives with copies of all correspondence to and from, and all documents issued to and by, the Commission in connection with the registration of the Securities under the Securities Act or any of the Registration Statement, any Preliminary Prospectus or the Prospectus, or any amendment or supplement thereto or document incorporated by reference therein.

(n) Prior to the latest of the Closing Dates, not to issue any press release or other communication directly or indirectly or hold any press conference with respect to the Company, its condition, financial or otherwise, or earnings, business affairs or business prospects (except for routine oral marketing communications in the ordinary course of business and consistent with the past practices of the Company and of which the Representatives are notified), without the prior written consent of the Representatives, unless in the judgment of the Company and its counsel, and after notification to the Representatives, such press release or communication is required by law.

(o) Until the Representatives shall have notified the Company of the completion of the resale of the Securities, that the Company will not, and will use its reasonable best efforts to cause its affiliated purchasers (as defined in Regulation M under the Exchange Act) not to, either alone or with one or more other persons, bid for or purchase, for any account in which it or any of its affiliated purchasers has a beneficial interest, any Securities, or attempt to induce any person to purchase any Securities; and not to, and to use its reasonable best efforts to cause its affiliated purchasers not to, make bids or purchase for the purpose of creating actual, or apparent, active trading in or of raising the price of the Securities.

- (p) Not to take any action prior to the latest of the Closing Dates which would require the Prospectus to be amended or supplemented pursuant to Section 4(d).
- (q) To at all times comply in all material respects with all applicable provisions of the Sarbanes-Oxley Act in effect from time to time.
- (r) To maintain, at its expense, a registrar and transfer agent for the Securities.
- (s) To apply the net proceeds from the sale of the Securities as set forth in the Registration Statement, the General Disclosure Package and the Prospectus under the heading “*Use of Proceeds*,” and except as disclosed in the General Disclosure Package, the Company does not intend to use any of the proceeds from the sale of the Securities hereunder to repay any outstanding debt owed to any affiliate of any Underwriter. The Company shall manage its affairs and investments in such a manner as not to be or become an “investment company” within the meaning of the Investment Company Act and the rules and regulations thereunder.
- (t) To use its reasonable best efforts to list, subject to notice of issuance, the Securities on The Nasdaq Global Market.
- (u) To use its reasonable best efforts to do and perform all things required to be done or performed under this Agreement by the Company prior to each Closing Date and to satisfy all conditions precedent to the delivery of the Firm Securities and the Optional Stock.
- (v) Upon request of any Underwriter, to furnish, or cause to be furnished, to such Underwriter an electronic version of the Company’s trademarks, service marks and corporate logo for use on the website, if any, operated by such Underwriter for the purpose of facilitating the on-line offering of the Securities (the “*License*”); *provided, however* that the License shall be used solely for the purpose described above, is granted without any fee and may not be assigned or transferred.
- (w) At all times while any Warrants are outstanding, to 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 Stock upon exercise of such Warrants, the number of Warrant Stock that are initially issuable and deliverable upon the exercise of the then-outstanding Warrants.

5. *PAYMENT OF EXPENSES.* The Company agrees to pay, or reimburse if paid by any Underwriter, whether or not the transactions contemplated hereby are consummated or this Agreement is terminated: (a) the costs incident to the authorization, issuance, sale, preparation and delivery of the Securities and any taxes payable in that connection; (b) the costs incident to the registration of the Securities under the Securities Act; (c) the costs incident to the preparation, printing and distribution of the Registration Statement, any Preliminary Prospectus, any Issuer Free Writing Prospectus, the General Disclosure Package, the Prospectus, any amendments, supplements and exhibits thereto or any document incorporated by reference therein; (d) the fees and expenses (including reasonable related fees and expenses of counsel for the Underwriters in an amount not to exceed an aggregate amount of \$15,000) incurred in connection with securing any required review by FINRA of the terms of the sale of the Securities and any filings made with FINRA relating to the offering of the Securities; (e) any applicable listing or other fees; (f) the fees and expenses (including related fees and expenses of counsel to the Underwriters) of qualifying the Securities under the securities laws of the several jurisdictions as provided in Section 4(j) and of preparing, printing and distributing wrappers, Blue Sky Memoranda and Legal Investment Surveys; (g) the cost of preparing and printing stock certificates; (h) all fees and expenses of the registrar and transfer agent of the Securities; (i) the costs and expenses (including, without limitation, any damages or other amounts payable in connection with the legal or contractual liability) associated with the reforming of any contracts for sale of the Securities made by the Underwriters caused by a breach of the representation contained in Section 2(b); (j) the costs and expenses of the Company relating to investor presentations on any “road show” undertaken in connection with the marketing of the offering of the Securities, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the officers of the Company and such consultants; *provided*, that the Company shall be responsible for 50% of the cost of any aircraft chartered in connection with the road show and the Underwriters shall be responsible for the balance; (k) all other costs and expenses of the Company incident to the offering of the Securities or the performance of the obligations of the Company under this Agreement (including, without limitation, the fees and expenses of the Company’s counsel and the Company’s independent accountants); and (l) the costs of reproducing and distributing each of the Warrants; *provided* that, except to the extent otherwise provided in this Section 5 and in Sections 9 and 10, the Underwriters shall pay their own costs and expenses, including the fees and expenses of their counsel not contemplated herein, any transfer taxes on the resale of any Securities by them and the expenses of advertising any offering of the Securities made by the Underwriters.



6. *CONDITIONS OF UNDERWRITERS' OBLIGATIONS.* The respective obligations of the several Underwriters hereunder are subject to the accuracy, when made and as of the Applicable Time and on each Closing Date, of the representations and warranties of the Company contained herein, to the accuracy of the statements of the Company made in any certificates pursuant to the provisions hereof, to the performance by the Company of its obligations hereunder, and to each of the following additional terms and conditions:

(a) The Registration Statement has become effective under the Securities Act, and no stop order suspending the effectiveness of the Registration Statement or any part thereof, preventing or suspending the use of any Preliminary Prospectus, the Prospectus or any Permitted Free Writing Prospectus or any part thereof shall have been issued and no proceedings for that purpose or pursuant to Section 8A under the Securities Act shall have been initiated or threatened by the Commission, and all requests for additional information on the part of the Commission (to be included or incorporated by reference in the Registration Statement or the Prospectus or otherwise) shall have been complied with to the reasonable satisfaction of the Representatives; the Rule 462(b) Registration Statement, if any, each Issuer Free Writing Prospectus and the Prospectus shall have been filed with the Commission within the applicable time period prescribed for such filing by, and in compliance with, the Rules and Regulations and in accordance with Section 4(a), and the Rule 462(b) Registration Statement, if any, shall have become effective immediately upon its filing with the Commission; and FINRA shall have raised no unresolved objection to the fairness and reasonableness of the terms of this Agreement or the transactions contemplated hereby (or the offering shall be otherwise exempt from filing with FINRA under FINRA Rule 5110(h)(1)).

(b) None of the Underwriters shall have discovered and disclosed to the Company on or prior to such Closing Date that the Registration Statement or any amendment or supplement thereto contains an untrue statement of a fact which, in the opinion of counsel for the Underwriters, is material or omits to state any fact which, in the opinion of such counsel, is material and is required to be stated therein or is necessary to make the statements therein not misleading, or that the General Disclosure Package, any Issuer Free Writing Prospectus or the Prospectus or any amendment or supplement thereto contains an untrue statement of fact which, in the opinion of such counsel, is material or omits to state any fact which, in the opinion of such counsel, is material and is necessary in order to make the statements, in the light of the circumstances in which they were made, not misleading.

(c) All corporate proceedings and other legal matters incident to the authorization, form and validity of each of this Agreement, the Securities, the Registration Statement, the General Disclosure Package, each Issuer Free Writing Prospectus and the Prospectus and all other legal matters relating to this Agreement and the transactions contemplated hereby shall be reasonably satisfactory in all material respects to counsel for the Underwriters, and the Company shall have furnished to such counsel all documents and information that they may reasonably request to enable them to pass upon such matters.

(d) K&L Gates LLP shall have furnished to the Representative such counsel's written opinion and negative assurance letter, as counsel to the Company, addressed to the Underwriters and dated as of such Closing Date, in form and substance reasonably satisfactory to the Representatives.

(e) Cooley LLP shall have furnished to the Representatives such counsel's written opinion, as intellectual property counsel to the Company, addressed to the Underwriters and dated such Closing Date, in form and substance reasonably satisfactory to the Representatives.

(f) The Representatives shall have received from Latham & Watkins LLP, counsel for the Underwriters, such opinion or opinions, dated as of such Closing Date, with respect to such matters as the Underwriters may reasonably require, and the Company shall have furnished to such counsel such documents as they request for enabling them to pass upon such matters.

(g) At the time of the execution of this Agreement, the Representatives shall have received from EisnerAmper LLP a letter, addressed to the Underwriters, executed and dated such date, in form and substance satisfactory to the Representatives (i) confirming that they are an independent registered accounting firm with respect to the Company and its subsidiaries within the meaning of the Securities Act and the Rules and Regulations and PCAOB and (ii) stating the conclusions and findings of such firm, of the type ordinarily included in accountants' "comfort letters" to underwriters, with respect to the financial statements and certain financial information contained or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus.

(h) On the effective date of any post-effective amendment to the Registration Statement and on such Closing Date, the Representatives shall have received a letter (the “**bring-down letter**”) from EisnerAmper LLP addressed to the Underwriters and dated such Closing Date confirming, as of the date of the bring-down letter (or, with respect to matters involving changes or developments since the respective dates as of which specified financial information is given in the General Disclosure Package and the Prospectus, as the case may be, as of a date not more than three (3) business days prior to the date of the bring-down letter), the conclusions and findings of each firm, of the type ordinarily included in accountants’ “comfort letters” to underwriters, with respect to the financial information and other matters covered by its letter delivered to the Representatives concurrently with the execution of this Agreement pursuant to paragraph (g) of this Section 6.

(i) The Company shall have furnished to the Representatives a certificate, dated such Closing Date, of its Chief Executive Officer or President and its Principal Financial Officer stating in their respective capacities as officers of the Company on behalf of the Company and not in their individual capacities that (i) no stop order suspending the effectiveness of the Registration Statement (including, for avoidance of doubt, any Rule 462(b) Registration Statement), or any post-effective amendment thereto, shall be in effect and no proceedings for such purpose shall have been instituted or, to their knowledge, threatened by the Commission, (ii) for the period from and including the date of this Agreement through and including such Closing Date, there has not occurred any Material Adverse Effect, (iii) to their knowledge, after reasonable investigation, as of such Closing Date, the representations and warranties of the Company in this Agreement that are qualified by materiality are true and correct and the representations and warranties of the Company not qualified by materiality are true and correct in all material respects, and the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to such Closing Date, and (iv) there has not been, subsequent to the date of the most recent audited consolidated financial statements included or incorporated by reference in the General Disclosure Package, any Material Adverse Effect in the financial position or results of operations of the Company, or any change or development that, singularly or in the aggregate, would reasonably be expected to involve a Material Adverse Effect, except as set forth in the General Disclosure Package and the Prospectus.

(j) Since the date of the latest audited consolidated financial statements included in or incorporated by reference in the General Disclosure Package, (i) the Company and its subsidiaries shall not have 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, otherwise than as set forth in the General Disclosure Package, and (ii) there shall not have been any change in the capital stock or long-term debt of the Company or any of its subsidiaries, or any change, or any development involving a prospective change, in or affecting the business, general affairs, management, financial position, stockholders’ equity or results of operations of the Company or any of its subsidiaries, otherwise than as set forth in the General Disclosure Package or the Prospectus, the effect of which, in any such case described in clause (i) or (ii) of this paragraph (k) is, in the judgment of the Representatives, so material and adverse as to make it impracticable or inadvisable to proceed with the sale or delivery of the Securities on the terms and in the manner contemplated in the General Disclosure Package.

(k) No action shall have been taken and no law, statute, rule, regulation or order shall have been enacted, adopted or issued by any governmental agency or body which would prevent the issuance or sale of the Securities or materially and adversely affect or potentially materially and adversely affect the business or operations of the Company or any of its subsidiaries; and no injunction, restraining order or order of any other nature by any federal or state court of competent jurisdiction shall have been issued which would prevent the issuance or sale of the Securities or materially and adversely affect or potentially materially and adversely affect the business or operations of the Company or any of its subsidiaries.

(l) Subsequent to the execution and delivery of this Agreement there shall not have occurred any of the following: (i) trading in any of the Company’s securities shall have been suspended or materially limited by the Commission or the Exchange, or trading in securities generally on the New York Stock Exchange, The Nasdaq Global Select Market, The Nasdaq Global Market, The Nasdaq Capital Market or the NYSE MKT LLC or in the over-the-counter market, or trading in any securities of the Company on any exchange or in the over-the-counter market, shall have been suspended or materially limited, or minimum or maximum prices or maximum range for prices shall have been established on any such exchange or such market by the Commission, by such exchange or market or by any other regulatory body or governmental authority having jurisdiction, (ii) a banking moratorium shall have been declared by Federal or state authorities or a material disruption has occurred in commercial banking or securities settlement or clearance services in the United States, (iii) the United States shall have become engaged in hostilities, or the subject of an act of terrorism, or there shall have been an outbreak of or escalation in hostilities involving the United States, or there shall have been a declaration of a national emergency or war by the United States or (iv) there shall have occurred such a material adverse change in general economic, political or financial conditions (or the effect of international conditions on the financial markets in the United States shall be such) as to make it, in the judgment of the Representatives, impracticable or inadvisable to proceed with the sale or delivery of the Securities on the terms and in the manner contemplated in the General Disclosure Package and the Prospectus.

(m) The Company shall have filed a Notification: Listing of Additional shares with The Nasdaq Global Market and shall have received no objection thereto from The Nasdaq Global Market.

(n) The Representatives shall have received on and as of such Closing Date satisfactory evidence of the good standing of the Company and its subsidiaries in their respective jurisdictions of organization and their good standing as foreign entities in such other jurisdictions as the Representatives may reasonably request, in each case in writing or any standard form of telecommunication from the appropriate Governmental Authorities of such jurisdictions

(o) The Representatives shall have received the written agreements, substantially in the form of Exhibit I hereto, of the officers, directors and certain holders of the Company's capital stock, as set forth in Schedule D hereto.

(p) The Company shall have furnished to the Representatives a Secretary's Certificate of the Company, in form and substance reasonably satisfactory to counsel for the Underwriters and customary for the type of offering contemplated by this Agreement.

(q) [Reserved].

(r) On or prior to such Closing Date, the Company shall have furnished to the Representatives such further certificates and documents as the Representatives may reasonably request.

(s) The Representatives shall have received a form of Warrant in form and substance reasonably acceptable to the Representatives.

All opinions, letters, evidence and certificates mentioned above or elsewhere in this Agreement shall be deemed to be in compliance with the provisions hereof only if they are in form and substance reasonably satisfactory to counsel for the Underwriters.

## 7. INDEMNIFICATION AND CONTRIBUTION.

(a) The Company shall indemnify and hold harmless: (i) each Underwriter, its affiliates, directors, officers, managers, members, employees, representatives and agents and each person, if any, who controls any Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the "**Underwriter Indemnified Parties**," and each an "**Underwriter Indemnified Party**") against any loss, claim, damage, expense or liability whatsoever (or any action, investigation or proceeding in respect thereof), joint or several, to which such Underwriter Indemnified Party may become subject, under the Securities Act or otherwise, insofar as such loss, claim, damage, expense, liability, action, investigation or proceeding arises out of or is based upon (A) any untrue statement or alleged untrue statement of a material fact contained in any Preliminary Prospectus, any Issuer Free Writing Prospectus, any "issuer information" filed or required to be filed pursuant to Rule 433(d) of the Rules and Regulations, the Registration Statement, the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein or in any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the offering of the Common Stock, including any roadshow or investor presentations made to investors by the Company (whether in person or electronically) ("**Marketing Materials**") or (B) the omission or alleged omission to state in any Preliminary Prospectus, any Issuer Free Writing Prospectus, any "issuer information" filed or required to be filed pursuant to Rule 433(d) of the Rules and Regulations, the Registration Statement or the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein, or in any Marketing Materials, a material fact required to be stated therein or necessary to make the statements therein not misleading, and shall reimburse each Underwriter Indemnified Party promptly upon demand for any legal fees or other expenses reasonably incurred by that Underwriter Indemnified Party in connection with investigating, or preparing to defend, or defending against, or appearing as a third party witness in respect of, or otherwise incurred in connection with, any such loss, claim, damage, expense, liability, action, investigation or proceeding, as such fees and expenses are incurred; *provided, however*, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, expense or liability arises out of or is based upon an untrue statement or alleged untrue statement in, or omission or alleged omission from any Preliminary Prospectus, the Registration Statement or the Prospectus, or any such amendment or supplement thereto, any Issuer Free Writing Prospectus or any Marketing Materials made in reliance upon and in conformity with written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for use therein, which information the parties hereto agree is limited to the Underwriters' Information; and (ii) each indemnity agreement in this Section 7(a) is not exclusive and is in addition to each other indemnity agreement in this Section 7(a) and each other liability which the Company might have under this Agreement or otherwise, and shall not limit any rights or remedies which may otherwise be available under this Agreement, at law or in equity to any Underwriter Indemnified Party.

(b) Each Underwriter, severally and not jointly, shall indemnify and hold harmless the Company and its directors, its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the “**Company Indemnified Parties**” and each a “**Company Indemnified Party**”) against any loss, claim, damage, expense or liability whatsoever (or any action, investigation or proceeding in respect thereof), joint or several, to which such Company Indemnified Party may become subject, under the Securities Act or otherwise, insofar as such loss, claim, damage, expense, liability, action, investigation or proceeding arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in any Preliminary Prospectus, any Issuer Free Writing Prospectus, any “issuer information” filed or required to be filed pursuant to Rule 433(d) of the Rules and Regulations, the Registration Statement or the Prospectus, or in any amendment or supplement thereto, or (ii) the omission or alleged omission to state in any Preliminary Prospectus, any Issuer Free Writing Prospectus, any “issuer information” filed or required to be filed pursuant to Rule 433(d) of the Rules and Regulations, the Registration Statement or the Prospectus, or in any amendment or supplement thereto, a material fact required to be stated therein or necessary to make the statements therein not misleading, but in each case only to the extent that the untrue statement or alleged untrue statement or omission or alleged omission was made in reliance upon and in conformity with written information furnished to the Company through the Representatives by or on behalf of that Underwriter specifically for use therein, which information the parties hereto agree is limited to the Underwriters’ Information, and shall reimburse the Company Indemnified Parties for any legal or other expenses reasonably incurred by such party in connection with investigating or preparing to defend or defending against or appearing as third party witness in connection with any such loss, claim, damage, liability, action, investigation or proceeding, as such fees and expenses are incurred. This indemnity agreement is not exclusive and will be in addition to any liability which the Underwriters might otherwise have and shall not limit any rights or remedies which may otherwise be available under this Agreement, at law or in equity to the Company Indemnified Parties.

(c) Promptly after receipt by an indemnified party under this Section 7 of notice of the commencement of any action, the indemnified party shall, if a claim in respect thereof is to be made against an indemnifying party under this Section 7, notify such indemnifying party in writing of the commencement of that action; *provided, however*, that the failure to notify the indemnifying party shall not relieve it from any liability which it may have under this Section 7 except to the extent it has been materially prejudiced by such failure; and *provided, further*, that the failure to notify an indemnifying party shall not relieve it from any liability which it may have to an indemnified party otherwise than under this Section 7. If any such action shall be brought against an indemnified party, and it shall notify the indemnifying party thereof, the indemnifying party, upon request of the indemnified party, shall retain counsel reasonably satisfactory to the indemnified party (which counsel shall not, except with the written consent of the indemnified party, be counsel to the indemnifying party) to represent the indemnified party and any others the indemnifying party may designate in such proceeding and shall pay the fees and disbursements of such counsel related to such proceeding. In any such proceeding, any indemnified party shall have the right to retain its own counsel, but the fees and expenses of such counsel (other than reasonable costs of investigation) shall be at the expense of such indemnified party unless (i) the employment thereof has been specifically authorized in writing by the Company in the case of a claim for indemnification under Section 7(a) or the Representatives in the case of a claim for indemnification under Section 7(b), (ii) such indemnified party shall have been advised by its counsel that there may be one or more legal defenses available to it which are different from or additional to those available to the indemnifying party, or (iii) the indemnifying party has failed to employ counsel reasonably satisfactory to the indemnified party within a reasonable period of time after notice of the commencement of the action; *provided, however*, that the indemnifying party shall not, in connection with any one such action or separate but substantially similar or related actions in the same jurisdiction arising out of the same general allegations or circumstances, be liable for the reasonable fees and expenses of more than one separate firm of attorneys at any time for all such indemnified parties (in addition to one local counsel), which firm shall be designated in writing by the Representatives if the indemnified parties under this Section 7 consist of any Underwriter Indemnified Party or by the Company if the indemnified parties under this Section 7 consist of any Company Indemnified Parties. Subject to this Section 7(c), the amount payable by an indemnifying party under Section 7 shall include, but not be limited to, (x) reasonable and documented legal fees and expenses of counsel to the indemnified party and any other expenses in investigating, or preparing to defend or defending against, or appearing as a third party witness in respect of, or otherwise incurred in connection with, any action, investigation, proceeding or claim, and (y) all amounts paid in settlement of any of the foregoing. No indemnifying party shall, without the prior written consent of the indemnified parties (which consent shall not be unreasonably withheld or delayed), settle or compromise or consent to the entry of judgment with respect to any pending or threatened action or any claim whatsoever, in respect of which indemnification or contribution could be sought under this Section 7 (whether or not the indemnified parties are actual or potential parties thereto), unless such settlement, compromise or consent (i) includes an unconditional release of each indemnified party in form and substance reasonably satisfactory to such indemnified party from all liability arising out of such action or claim and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party. Subject to the provisions of the following sentence, no indemnifying party shall be liable for settlement of any pending or threatened action or any claim whatsoever that is effected without its written consent (which consent shall not be unreasonably withheld or delayed), but if settled with its written consent, if its consent has been unreasonably withheld or delayed or if there be a judgment for the plaintiff in any such matter, the indemnifying party agrees to indemnify and hold harmless any indemnified party from and against any loss or liability by reason of such settlement or judgment. In addition, if at any time an indemnified party shall have requested that an indemnifying party reimburse the indemnified party for fees and expenses of counsel, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 7(a) effected without its written consent if (i) such settlement is entered into more than forty-five (45) days after receipt by such indemnifying party of the request for reimbursement, (ii) such indemnifying party shall have received notice of the terms of such settlement at least thirty (30) days prior to such settlement being entered into and (iii) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

(d) If the indemnification provided for in this Section 7 is unavailable or insufficient to hold harmless an indemnified party under Section 7(a) or 7(b), then each indemnifying party shall, in lieu of indemnifying such indemnified party, contribute to the amount paid, payable or otherwise incurred by such indemnified party as a result of such loss, claim, damage, expense or liability (or any action, investigation or proceeding in respect thereof), as incurred, (i) in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters on the other from the offering of the Securities, or (ii) if the allocation provided by clause (i) of this Section 7(d) is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) of this Section 7(d) but also the relative fault of the Company on the one hand and the Underwriters on the other with respect to the statements, omissions, acts or failures to act which resulted in such loss, claim, damage, expense or liability (or any action, investigation or proceeding in respect thereof) as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriters on the other with respect to such offering shall be deemed to be in the same proportion as the total net proceeds from the offering of the Securities purchased under this Agreement (before deducting expenses) received by the Company bear to the total underwriting discounts and commissions received by the Underwriters with respect to the Stock and Warrants purchased under this Agreement, in each case as set forth in the table on the cover page of the Prospectus. The relative fault of the Company on the one hand and the Underwriters on the other shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company on the one hand or the Underwriters on the other, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such untrue statement, omission, act or failure to act; *provided* that the parties hereto agree that the written information furnished to the Company through the Representatives by or on behalf of the Underwriters for use in the Preliminary Prospectus, any Registration Statement or the Prospectus, or in any amendment or supplement thereto, consists solely of the Underwriters' Information.

(e) The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to Section 7(d) above were to be determined by pro rata allocation or by any other method of allocation which does not take into account the equitable considerations referred to in Section 7(d) above. The amount paid or payable by an indemnified party as a result of the loss, claim, damage, expense, liability, action, investigation or proceeding referred to in Section 7(d) above shall be deemed to include, subject to the limitations set forth above, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating, preparing to defend or defending against or appearing as a third party witness in respect of, or otherwise incurred in connection with, any such loss, claim, damage, expense, liability, action, investigation or proceeding. Notwithstanding the provisions of this Section 7, no Underwriter shall be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the Securities exceeds the amount of any damages which the Underwriter has otherwise paid or become liable to pay by reason of any untrue or alleged untrue statement, omission or alleged omission, act or alleged act or failure to act or alleged failure to act. 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 Underwriters' obligations to contribute as provided in this Section 7 are several in proportion to their respective underwriting obligations and not joint.

8. *TERMINATION.* The obligations of the Underwriters hereunder may be terminated by the Representatives, in their absolute discretion by notice given to the Company prior to delivery of and payment for the Firm Securities if, prior to that time, any of the events described in Sections 6(j) or 6(l) have occurred or if the Underwriters shall decline to purchase the Securities for any reason permitted under this Agreement.

9. *REIMBURSEMENT OF UNDERWRITERS' EXPENSES.* Notwithstanding anything to the contrary in this Agreement, if (a) this Agreement shall have been terminated pursuant to Section 8 or 10, (b) the Company shall fail to tender the Securities for delivery to the Underwriters, or in the case of the Warrants, to the purchaser thereof, for any reason not permitted under this Agreement, (c) the Underwriters shall decline to purchase the Securities for any reason permitted under this Agreement or (d) the sale of the Securities is not consummated because any condition to the obligations of the Underwriters set forth herein is not satisfied or because of the refusal, inability or failure on the part of the Company to perform any agreement herein or to satisfy any condition or to comply with the provisions hereof, then in addition to the payment of amounts in accordance with Section 5, the Company shall reimburse the Underwriters for the accountable fees and expenses of Underwriters' counsel and for such other out-of-pocket accountable expenses as shall have been actually incurred by them in connection with this Agreement and the proposed purchase of the Securities, including, without limitation, reasonable travel and lodging expenses of the Underwriters, and upon demand the Company shall pay the full amount thereof to the Representatives; *provided* that if this Agreement is terminated pursuant to Section 10 by reason of the default of one or more Underwriters, the Company shall not be obligated to reimburse any defaulting Underwriter on account of expenses to the extent incurred by such defaulting Underwriter; *provided, further* that the foregoing shall not limit any reimbursement obligation of the Company to any non-defaulting Underwriter under this Section 9.

10. *SUBSTITUTION OF UNDERWRITERS.* If any Underwriter or Underwriters shall default in its or their obligations to purchase shares of Securities hereunder on any Closing Date and the aggregate number of shares which such defaulting Underwriter or Underwriters agreed but failed to purchase does not exceed ten percent (10%) of the total number of shares to be purchased by all Underwriters on such Closing Date, the other Underwriters shall be obligated severally, in proportion to their respective commitments hereunder, to purchase the shares which such defaulting Underwriter or Underwriters agreed but failed to purchase on such Closing Date. If any Underwriter or Underwriters shall so default and the aggregate number of shares with respect to which such default or defaults occur is more than ten percent (10%) of the total number of shares to be purchased by all Underwriters on such Closing Date and arrangements satisfactory to the Representatives and the Company for the purchase of such shares by other persons are not made within forty-eight (48) hours after such default, this Agreement shall terminate.

If the remaining Underwriters or substituted Underwriters are required hereby or agree to take up all or part of the shares of Securities of a defaulting Underwriter or Underwriters on such Closing Date as provided in this Section 10, (i) the Company shall have the right to postpone such Closing Dates for a period of not more than five (5) full business days in order that the Company may effect whatever changes may thereby be made necessary in the Registration Statement or the Prospectus, or in any other documents or arrangements, and the Company agrees promptly to file any amendments to the Registration Statement or supplements to the Prospectus which may thereby be made necessary, and (ii) the respective numbers of shares to be purchased by the remaining Underwriters or substituted Underwriters shall be taken as the basis of their underwriting obligation for all purposes of this Agreement. Nothing herein contained shall relieve any defaulting Underwriter of its liability to the Company or the other Underwriters for damages occasioned by its default hereunder. Any termination of this Agreement pursuant to this Section 10 shall be without liability on the part of any non-defaulting Underwriter or the Company, except that the representations, warranties, covenants, indemnities, agreements and other statements set forth in Section 2, the obligations with respect to expenses to be paid or reimbursed pursuant to Sections 5 and 9 and the provisions of Section 7 and Sections 11 through 21, inclusive, shall not terminate and shall remain in full force and effect.

11. *ABSENCE OF FIDUCIARY RELATIONSHIP.* The Company acknowledges and agrees that:

(a) each Underwriter's responsibility to the Company is solely contractual in nature, the Representatives have been retained solely to act as underwriters in connection with the sale of the Securities and no fiduciary, advisory or agency relationship between the Company and the Representatives has been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether any of the Representatives has advised or is advising the Company on other matters;

(b) the price of the Securities set forth in this Agreement was established by the Company following discussions and arms-length negotiations with the Representatives, and the Company is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) it has been advised that the Representatives and their affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Representatives have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship;

(d) the Underwriters have not provided any recommendation or investment advice nor have the Underwriters solicited any action from the undersigned with respect to the offering of the Securities and the undersigned has consulted their own legal, accounting, financial, regulatory and tax advisors to the extent deemed appropriate. Although the Representatives may be required or choose to provide certain Regulation Best Interest and Form CRS disclosures to you in connection with the offering of the Securities, the Representatives and the other Underwriters are not making a recommendation to you to enter into this Agreement, and nothing set forth in such disclosures is intended to suggest that the Representatives or any Underwriter is making such a recommendation. Furthermore, none of the activities of the Underwriters in connection with the transactions contemplated herein constitutes a recommendation, investment advice, or solicitation of any action by the Underwriters with respect to any entity or natural person; and

(e) it waives, to the fullest extent permitted by law, any claims it may have against the Representatives for breach of fiduciary duty or alleged breach of fiduciary duty and agrees that the Representatives shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on behalf of or in right of the Company, including stockholders, employees or creditors of the Company.

12. *SUCCESSORS; PERSONS ENTITLED TO BENEFIT OF AGREEMENT.* This Agreement shall inure to the benefit of and be binding upon the several Underwriters, the Company and their respective successors and assigns. Nothing expressed or mentioned in this Agreement is intended or shall be construed to give any person, other than the persons mentioned in the preceding sentence, any legal or equitable right, remedy or claim under or in respect of this Agreement, or any provisions herein contained, this Agreement and all conditions and provisions hereof being intended to be and being for the sole and exclusive benefit of such persons and for the benefit of no other person; except that the representations, warranties, covenants, agreements and indemnities of the Company contained in this Agreement shall also be for the benefit of the Underwriter Indemnified Parties and the indemnities of the several Underwriters shall be for the benefit of the Company Indemnified Parties. It is understood that each Underwriter's responsibility to the Company is solely contractual in nature and the Underwriters do not owe the Company, or any other party, any fiduciary duty as a result of this Agreement. No purchaser of any of the Securities from any Underwriter shall be deemed to be a successor or assign by reason merely of such purchase.

13. *SURVIVAL OF INDEMNITIES, REPRESENTATIONS, WARRANTIES, ETC.* The respective indemnities, covenants, agreements, representations, warranties and other statements of the Company and the several Underwriters, as set forth in this Agreement or made by them respectively, pursuant to this Agreement, shall remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter, the Company or any person controlling any of them and shall survive delivery of and payment for the Securities. Notwithstanding any termination of this Agreement, including without limitation any termination pursuant to Section 8 or Section 10, the indemnities, covenants, agreements, representations, warranties and other statements forth in Sections 2, 5, 7 and 9 and Sections 11 through 21, inclusive, of this Agreement shall not terminate and shall remain in full force and effect at all times.

14. *NOTICES.* All statements, requests, notices and agreements hereunder shall be in writing, and:

(a) if to the Underwriters, shall be delivered or sent by mail, telex or facsimile transmission to: J.P. Morgan Securities LLC, 383 Madison Avenue, New York, New York 10179 (fax: (212) 622-8358); Attention: Equity Syndicate Desk; Morgan Stanley & Co. LLC, 1585 Broadway, 29th Floor, New York, New York 10036, Attention: Equity Syndicate Desk; Leerink Partners LLC, 1301 Avenue of the Americas, 12th Floor, New York, New York 10019, Attention: Stuart Nayman; and Cowen and Company, LLC, 599 Lexington Avenue, New York, New York 10022, Attention: Head of Equity Capital Markets, with a copy to the General Counsel, Investment Banking;

(b) if to the Company shall be delivered or sent by mail, telex, facsimile transmission or email to Rocket Pharmaceuticals, Inc., 9 Cedar Brook Drive, Cranbury, NJ 08512, Attention: Gaurav Shah, Chief Executive Officer, Telephone: (646) 440-9100, Email: gs@rocketpharma.com, with a copy to K&L Gates LLP, Whitney J. Smith, Esq., Telephone: (212) 536-3930, Email: whitney.smith@klgates.com;

*provided, however,* that any notice to an Underwriter pursuant to Section 7 shall be delivered or sent by mail, or facsimile transmission to such Underwriter at its address set forth in its acceptance telex to the Representatives, which address will be supplied to any other party hereto by the Representatives upon request. Any such statements, requests, notices or agreements shall take effect at the time of receipt thereof.

15. *RECOGNITION OF THE U.S. SPECIAL RESOLUTION REGIMES.*

(a) In the event that any Underwriter that is a Covered Entity becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from such Underwriter of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that any Underwriter that is a Covered Entity or a BHC Act Affiliate of such Underwriter becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against such Underwriter are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

For purposes of this Section 15, a “BHC Act Affiliate” has the meaning assigned to the term “affiliate” in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k). “Covered Entity” means any of the following: (i) a “covered entity” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b); (ii) a “covered bank” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or (iii) a “covered FSI” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b). “Default Right” has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable. “U.S. Special Resolution Regime” means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

16. *DEFINITION OF CERTAIN TERMS.* For purposes of this Agreement, (a) “*affiliate*” has the meaning set forth in Rule 405 under the Securities Act, (b) “*business day*” means any day on which the New York Stock Exchange, Inc. is open for trading and (c) “*subsidiary*” has the meaning set forth in Rule 405 of the Rules and Regulations.

17. *GOVERNING LAW AND JURISDICTION.* **This Agreement shall be governed by and construed in accordance with the laws of the State of New York, including without limitation Section 5-1401 of the New York General Obligations.** The Company irrevocably (a) submits to the non-exclusive jurisdiction of the Federal and state courts in the Borough of Manhattan in The City of New York for the purpose of any suit, action or other proceeding arising out of this Agreement or the transactions contemplated by this Agreement, the Registration Statement and any Preliminary Prospectus or the Prospectus, (b) agrees that all claims in respect of any such suit, action or proceeding may be heard and determined by any such court, (c) waives to the fullest extent permitted by applicable law, any immunity from the jurisdiction of any such court or from any legal process, (d) agrees not to commence any such suit, action or proceeding other than in such courts, and (e) waives, to the fullest extent permitted by applicable law, any claim that any such suit, action or proceeding is brought in an inconvenient forum.



18. *UNDERWRITERS' INFORMATION.* The parties hereto acknowledge and agree that, for all purposes of this Agreement, the Underwriters' Information consists solely of the following information in the Prospectus: the statements concerning the Underwriters contained in the third, twelfth, thirteenth and fourteenth paragraphs under the heading "Underwriting" (the "*Underwriters' Information*").

19. *AUTHORITY OF THE REPRESENTATIVES.* In connection with this Agreement, the Representatives will act for and on behalf of the several Underwriters, and any action taken under this Agreement by the Representatives will be binding on all the Underwriters.

20. *PARTIAL UNENFORCEABILITY.* The invalidity or unenforceability of any section, paragraph, clause or provision of this Agreement shall not affect the validity or enforceability of any other section, paragraph, clause or provision hereof. If any section, paragraph, clause or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

21. *GENERAL.* This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. In this Agreement, the masculine, feminine and neuter genders and the singular and the plural include one another. The section headings in this Agreement are for the convenience of the parties only and will not affect the construction or interpretation of this Agreement. This Agreement may be amended or modified, and the observance of any term of this Agreement may be waived, only by a writing signed by the Company and the Representatives.

22. *COUNTERPARTS.* This Agreement may be executed by any one or more of the parties hereto in any number of counterparts, each of which shall be deemed to be an original, but all such counterparts shall together constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including any electronic signature covered by the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, e.g., [www.docusign.com](http://www.docusign.com)) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

If the foregoing is in accordance with your understanding of the agreement between the Company and the several Underwriters, kindly indicate your acceptance of this Agreement by signing in the space provided for that purpose below.

[Signature page follows]




Accepted as of the date first above written:


J.P. MORGAN SECURITIES LLC  
MORGAN STANLEY & CO. LLC  
LEERINK PARTNERS LLC  
COWEN AND COMPANY, LLC

Acting on their own behalf and as  
Representatives of several Underwriters listed  
on Schedule A to this Agreement.

By: J.P. MORGAN SECURITIES LLC

By:   
Name: David Ke  
Title: Managing Director


By: MORGAN STANLEY & CO. LLC

By:   
Name: Chirag D. Surti  
Title: Executive Director

By: LEERINK PARTNERS LLC

By:   
Name: Anurag Jindal  
Title: Sr. Managing Director

By: COWEN AND COMPANY, LLC

By:   
Name: Kunal Bhatia  
Title: Managing Director

[Signature Page to Underwriting Agreement]

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SCHEDULE A

<b>Underwriter</b>	<b>Number of Shares of Firm Stock to be Sold</b>	<b>Number of Warrants to be Sold</b>	<b>Number of Shares of Optional Stock to be Sold</b>
J.P. Morgan Securities LLC	2,343,750	938,087	492,276
Morgan Stanley & Co. LLC	2,265,625	906,817	475,866
Leerink Partners LLC	1,328,125	531,582	278,956
Cowen and Company, LLC	1,328,125	531,582	278,956
LifeSci Capital LLC	546,875	218,887	114,864
Total	<u>7,812,500</u>	<u>3,126,955</u>	<u>1,640,918</u>

**SCHEDULE B**

**General Use Free Writing Prospectuses**

None.

## SCHEDULE C

### Pricing Information

Firm Stock to be sold: 7,812,500 shares

Optional Stock to be sold: 1,640,918 shares

Offering Price of Firm and Optional Stock: \$16.00 per share

Warrants to be sold: 3,126,955 warrants

Offering Price of Warrants: \$15.99 per Warrant

**SCHEDULE D**

**List of Parties to Lock-up Agreements**

Roderick Wong  
Carsten Boess  
Pedro Granadillo  
Gotham Makker  
Gaurav Shah  
David Southwell  
Naveen Yalamanchi  
Elisabeth Björk  
Mark White  
Martin Wilson  
Kinnari Patel  
John Militello  
Fady Malik  
RTW Master Fund, Ltd.  
RTW Innovation Master Fund, Ltd.  
RTW Biotech Opportunities Ltd

## Form of Lock-Up Agreement

\_\_\_\_\_, 2023

J.P. Morgan Securities LLC  
383 Madison Avenue  
New York, New York 10179

Morgan Stanley & Co. LLC  
1585 Broadway  
New York, New York 10036

Leerink Partners LLC  
1301 Avenue of the Americas, 12th Floor  
New York, New York 10019

Cowen and Company LLC  
599 Lexington Avenue  
New York, New York 10022

As Representatives of the several Underwriters

Re: Rocket Pharmaceuticals, Inc. – Registration Statement on Form S-3

Ladies and Gentlemen:

This agreement (the “**Lock-Up Agreement**”) is being delivered to you in connection with the proposed Underwriting Agreement (the “**Underwriting Agreement**”) between Rocket Pharmaceuticals, Inc., a Delaware corporation (the “**Company**”), J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC, Leerink Partners LLC and Cowen and Company, LLC as representatives (the “**Representatives**”) of a group of underwriters (collectively, the “**Underwriters**”) to be named therein, and the other parties thereto (if any), relating to the proposed public offering (the “**Offering**”) of shares of common stock of the Company, par value \$0.01 per share (the “**Common Stock**”).

In order to induce you and the other Underwriters to enter into the Underwriting Agreement, and in light of the benefits that the Offering will confer upon the undersigned in 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 each Underwriter that, during the period beginning on the date hereof through and including the date that is the 90th day after the date of the Underwriting Agreement (the “**Restricted Period**”), the undersigned will not, without the prior written consent of J.P. Morgan Securities LLC and Morgan Stanley & Co. LLC, directly or indirectly:

(i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock (including without limitation, Common Stock or such other securities which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission and securities of the Company which may be issued upon exercise of a stock option or warrant or settlement of a restricted stock unit (“**RSU**”)) that are currently or hereafter owned by the undersigned (collectively, the “**Undersigned’s Shares**”), or publicly disclose the intention to make any such offer, sale, pledge, grant, transfer or disposition;

(ii) enter into any swap, short sale, hedge or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Undersigned’s Shares regardless of whether any such transaction described in clause (i) above or this clause (ii) is to be settled by delivery of Common Stock or such other securities, in cash or otherwise; or

(iii) make any demand for or exercise any right with respect to the registration of any shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock.



The restrictions and obligations contemplated by this Lock-Up Agreement shall not apply to:

(a) transfers of the Undersigned's Shares:

(i) if the undersigned is a natural person, (A) to any person related to the undersigned by blood or adoption who is an immediate family member of the undersigned, or by marriage or domestic partnership (a "**Family Member**"), or to a trust formed for the benefit of the undersigned or any of the undersigned's Family Members, (B) to the undersigned's estate, following the death of the undersigned, by will, intestacy or other operation of law, (C) as a *bona fide* gift to a charitable organization, (D) by operation of law pursuant to a qualified domestic order or in connection with a divorce settlement or (E) to any partnership, corporation or limited liability company which is controlled by the undersigned and/or by any such Family Member(s);

(ii) if the undersigned is a corporation, partnership or other business entity, (A) to another corporation, partnership or other business entity that is an affiliate (as defined under Rule 12b-2 of the Exchange Act of 1934, as amended (the "**Exchange Act**")) of the undersigned, including investment funds or other entities under common control or management with the undersigned, (B) as a distribution or dividend to equity holders (including, without limitation, general or limited partners and members) of the undersigned (including upon the liquidation and dissolution of the undersigned pursuant to a plan of liquidation approved by the undersigned's equity holders) or (C) as a *bona fide* gift to a charitable organization; or

(iii) if the undersigned is a trust, to any grantors or beneficiaries of the trust;

*provided that*, in the case of any transfer or distribution pursuant to this clause (a), such transfer is not for value and each donee, heir, beneficiary or other transferee or distributee shall sign and deliver to the Representatives a lock-up agreement in the form of this Lock-Up Agreement with respect to the shares of Common Stock or such other securities that have been so transferred or distributed;

(b) the exercise of an option (including a net or cashless exercise of an option) to purchase shares of Common Stock, and any related transfer of shares of Common Stock to the Company for the purpose of paying the exercise price of such options or for paying taxes (including estimated taxes) due as a result of the exercise of such options (or the disposition to the Company of any shares of restricted stock granted pursuant to the terms of any employee benefit plan or restricted stock purchase agreement); *provided that*, for the avoidance of doubt, the underlying shares of Common Stock shall continue to be subject to the restrictions on transfer set forth in this Lock-Up Agreement;

(c) the sale of shares of Common Stock in order to pay any tax withholding obligations upon the vesting of RSUs; *provided that*, for the avoidance of doubt, (i) the underlying shares of Common Stock shall continue to be subject to the restrictions on transfer set forth in this Lock-Up Agreement, (ii) no public disclosure or filing under Section 16(a) of the Exchange Act shall be voluntarily made during the Restricted Period and (iii) to the extent a filing under Section 16(a) of the Exchange Act is required during the Restricted Period as a result of transfers in this clause (c), it shall (A) clearly indicate that the filing relates to the circumstances described in this clause (c), including that the securities remain subject to the terms of this letter and (B) no securities were sold by the undersigned other than pursuant to this clause (c);

(d) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of Common Stock (a "**10b5-1 Plan**"); *provided that* (1) such 10b5-1 Plan does not provide for any transfers of Common Stock during the Restricted Period and (2) to the extent a public announcement, report or filing under the Exchange Act, if any, is required by or on behalf of the undersigned or the Company regarding the establishment of such plan, such announcement, report or filing shall include a statement to the effect that no transfer, sale or other disposition of Common Stock of the Company may be made under such plan during the Restricted Period;

(e) the sale of shares of Common Stock pursuant to a 10b5-1 plan that complies with Rule 10b5-1 and that exists on the date of this Agreement, if any; *provided that* any Form 4 or Form 5 required to be filed under the Exchange Act if the undersigned is subject to Section 16 reporting with respect to the Company under the Exchange Act will indicate by footnote that such sale was made under the circumstances described in this clause; and *provided further that* no other filing under the Exchange Act or other public announcement shall be required or shall be made voluntarily in connection with such sale during the Restricted Period; or

(f) transfers by the undersigned of shares of Common Stock purchased by the undersigned on the open market following the Closing Date;

and *provided, further*, that, with respect to each of (b), (c) and (f) above, no filing by any party under the Exchange Act or other public announcement shall be required or shall be made voluntarily in connection with such transfer or disposition during the Restricted Period (other than in respect of a required filing under the Exchange Act in connection with the exercise of an option to purchase Common Stock following such individual's termination of employment with the Company that would otherwise expire during the Restricted Period, *provided* that such filing shall include a note stating that such exercise is in connection with such termination of employment).

Any attempted transfer in violation of this Lock-Up Agreement will be of no effect and null and void, regardless of whether the purported transferee has any actual or constructive knowledge of the transfer restrictions set forth in this Lock-Up Agreement, and will not be recorded on the share register of the Company. In furtherance of the foregoing, the undersigned agrees that the Company and any duly appointed transfer agent for the registration or transfer of the securities described herein are hereby authorized to decline to make any transfer of securities if such transfer would constitute a violation or breach of this Lock-Up Agreement. The Company may cause the legend set forth below, or a legend substantially equivalent thereto, to be placed upon any certificate(s) or other documents, ledgers or instruments evidencing the undersigned's ownership of Common Stock:

THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO AND MAY ONLY BE TRANSFERRED IN COMPLIANCE WITH A LOCK-UP AGREEMENT, A COPY OF WHICH IS ON FILE AT THE PRINCIPAL OFFICE OF THE COMPANY.

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Lock-Up Agreement and that this Lock-Up 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 Lock-Up Agreement and all authority herein conferred or agreed to be conferred and any obligations of the undersigned are irrevocable and shall be binding upon the successors, assigns, heirs or personal representatives of the undersigned. The undersigned understands that the Underwriters are proceeding with the Offering in reliance upon this Lock-Up Agreement.

Any and all remedies herein expressly conferred upon the Underwriters will be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity, and the exercise by the Underwriters of any one remedy will not preclude the exercise of any other remedy. The undersigned agrees that irreparable damage would occur to the Underwriters in the event that any provision of this Lock-Up Agreement were not performed in accordance with its specific terms or were otherwise breached. It is accordingly agreed that the Underwriters shall be entitled to an injunction or injunctions to prevent breaches of this Lock-Up Agreement and to enforce specifically the terms and provisions hereof in any court of the United States or any state having jurisdiction, this being in addition to any other remedy to which the Underwriters are entitled at law or in equity, and the undersigned waives any bond, surety or other security that might be required of the Company with respect thereto.

This Lock-Up Agreement and any claim, controversy or dispute arising under or related to this Lock-Up Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to the conflict of laws principles thereof.

This Lock-Up Agreement may be executed in several counterparts, each of which shall be deemed an original and all of which shall constitute one and the same instrument. The delivery of this Lock-Up Agreement executed by the undersigned by facsimile or electronic transmission (including any electronic signature covered by the U.S. federal E-SIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, e.g., [www.docusign.com](http://www.docusign.com)) in .pdf format (in counterparts or otherwise) shall be sufficient to bind the undersigned to the terms and conditions of this Lock-Up Agreement.

The undersigned acknowledges and agrees that the Underwriters have not provided any recommendation or investment advice nor have the Underwriters solicited any action from the undersigned with respect to the Offering of the Common Stock and the undersigned has consulted their own legal, accounting, financial, regulatory and tax advisors to the extent deemed appropriate. The undersigned further acknowledges and agrees that, although the Representatives may be required or choose to provide certain Regulation Best Interest and Form CRS disclosures to you in connection with the Offering, the Representatives and the other Underwriters are not making a recommendation to you to enter into this Lock-up Agreement, and nothing set forth in such disclosures is intended to suggest that the Representatives or any Underwriter is making such a recommendation.

If (i) the Company notifies the Representatives in writing that it does not intend to proceed with the Offering, (ii) the Underwriting Agreement is not executed by September 30, 2023, or (iii) the Underwriting 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 or her 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: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR ANY APPLICABLE STATE SECURITIES LAWS. SUCH SECURITIES HAVE BEEN ACQUIRED FOR INVESTMENT PURPOSES AND MAY NOT BE OFFERED FOR SALE, SOLD, DELIVERED AFTER SALE, TRANSFERRED, PLEDGED OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT FILED BY THE ISSUER WITH THE U.S. SECURITIES AND EXCHANGE COMMISSION COVERING SUCH SECURITIES UNDER THE SECURITIES ACT OR AN EXEMPTION FROM REGISTRATION.

ROCKET PHARMACEUTICALS, INC.

PRE-FUNDED WARRANT TO PURCHASE COMMON STOCK

Warrant No.

Number of Shares: [        ]  
 (subject to adjustment)  
 Original Issue Date: [        ]

Rocket Pharmaceuticals, Inc., a Delaware corporation (the "*Company*"), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [RTW Innovation Master Fund, Ltd.] or its permitted 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, \$0.01 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 \$0.01 per share (as adjusted from time to time as provided in Section 9 herein, the "*Exercise Price*"), upon surrender of this Pre-Funded Warrant to Purchase Common Stock (including any Pre-Funded 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*") and through the date on which this Warrant is exercised in full (the "*Expiration Date*"), and subject to the following terms and conditions:

1. Definitions. For purposes of this Warrant, the following terms shall have the following meanings:

(a) "*Affiliate*" means any Person directly or indirectly controlled by (including by a common investment manager), controlling or under common control with, a Holder, but only for so long as such control shall continue. For purposes of this definition, "control" (including, with correlative meanings, "controlled by," "controlling" and "under common control with") means, with respect to a Person, possession, direct or indirect, of (a) the power to direct or cause direction of the management and policies of such Person (whether through ownership of securities or partnership or other ownership interests, by contract or otherwise), or (b) at least 50% of the voting securities (whether directly or pursuant to any option, warrant or other similar arrangement) or other comparable equity interests.

(b) "*Commission*" means the United States Securities and Exchange Commission.

(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 and ask prices, 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 mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then the Board of Directors of the Company shall use its good faith judgment to determine the fair market value. 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.

(d) “*Principal Trading Market*” means the national securities exchange or other trading market on which the Common Stock is primarily listed on and quoted for trading, which, as of the Original Issue Date, shall be The Nasdaq Global Market.

(e) “*Securities Act*” means the Securities Act of 1933, as amended.

(f) “*Trading Day*” means any weekday on which the Principal Trading Market is open for trading.

(g) “*Transfer Agent*” means Continental Stock Transfer & Trust Company, the Company’s transfer agent and registrar for the Common Stock, and any successor appointed in such capacity.

2. Registration of Warrants. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “*Warrant Register*”), in the name of the record Holder (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 compliance with all applicable securities laws, the Company shall, or will cause its Transfer Agent to, register the transfer of all or any portion of this Warrant in the Warrant Register, upon surrender of this Warrant, and payment for all applicable transfer taxes (if any). 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, or will cause its Transfer Agent to, 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 Section 10 of this Warrant at any time and from time to time on or after the Original Issue Date and through and including 5:30 P.M. New York City time, on the Expiration Date. At 5:30 P.M., New York City time, on the Expiration Date, the portion of this Warrant not exercised prior thereto shall be and become void and of no value and this Warrant shall be terminated and no longer outstanding.

(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*.” The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder. 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.

5. Delivery of Warrant Shares.

(a) Upon exercise of this Warrant, the Company shall promptly (but in no event than two Trading Days after the Exercise Date or such shorter time period as then represents the standard settlement period for the Company's primary trading market or quotation system with respect to the Common Stock that is in effect on the date of delivery of an applicable Exercise Notice), upon the request of the Holder, credit such aggregate number of shares of Common Stock to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with The Depository Trust Company ("DTC") through its Deposit Withdrawal Agent Commission system, or if the Transfer Agent is not participating in the Fast Automated Securities Transfer Program (the "FAST Program") or if the certificates are required to bear a legend regarding restriction on transferability, issue and dispatch by overnight courier to the address as specified in the Exercise Notice, a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder is entitled pursuant to such exercise. The Holder, or any natural person or legal entity (each, a "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, irrespective of the date such Warrant Shares are credited to the Holder's DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be.

(b) If by the close of the fifth 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 fifth 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 two 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) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or 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. The provisions of this Section 5(b) shall be the only remedy available to the Holder in the event the Company fails to deliver to the Holder the required number of Warrant Shares in the manner required pursuant to Section 5(a) and a Buy-In occurs. Irrespective of whether there is a Buy-In, no remedy shall be available, notwithstanding the requirements of Section 5(a), unless and until the Company fails to deliver to the Holder the required number of Warrant Shares by the close of the fifth Trading Day after the Exercise Date.

(c) To the extent permitted by law and subject to Section 5(b), 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 11 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(b), 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 certificates representing shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

6. Charges, Taxes and Expenses. Issuance and delivery of certificates for shares of Common Stock 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 such certificates, 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 any certificates for Warrant Shares or this 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 in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and nonassessable. The Company will take all such action 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.

9. Certain Adjustments. The number of Warrant Shares issuable upon exercise of this Warrant is 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 issued and outstanding on the Original Issue Date and in accordance with the terms of such stock on the Original Issue Date or as amended, that is payable in shares of Common Stock, (ii) subdivides its outstanding shares of Common Stock into a larger number of shares of Common Stock, (iii) combines its outstanding shares of Common Stock into a smaller number of shares of Common Stock or (iv) issues by reclassification of shares of capital stock any additional shares of Common Stock of the Company, then in each such case the number of Warrant Shares then underlying this Warrant shall be divided 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; provided, however, that if such record date shall have been fixed and such dividend is not fully paid on the date fixed therefor, the number of Warrant Shares shall be recomputed accordingly as of the close of business on such record date and thereafter the Warrant Shares shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends. 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) cash or 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.



(c) Fundamental Transactions. If, at any time while this Warrant is outstanding (i) the Company effects any merger or consolidation of the Company with or into another Person, in which the Company is not the surviving entity or the stockholders of the Company immediately prior to such merger or consolidation do not own, directly or indirectly, at least 50% of the voting power of the surviving entity immediately after such merger or consolidation, (ii) the Company effects any sale to another Person of all or substantially all of its assets in one transaction or a series of related transactions, (iii) pursuant to any tender offer or exchange offer (whether by the Company or another Person), holders of capital stock who tender shares representing more than 50% of the voting power of the capital stock of the Company and the Company or such other Person, as applicable, accepts such tender for payment, (iv) the Company consummates a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than the 50% of the voting power of the capital stock of the Company (except for any such transaction in which the stockholders of the Company immediately prior to such transaction maintain, in substantially the same proportions, the voting power of such Person immediately after the transaction) or (v) the Company effects any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (other than as a result of a subdivision or combination of shares of Common Stock covered by Section 9(a) above) (in any such case, a “*Fundamental Transaction*”), then following such Fundamental Transaction the Holder shall have the right to receive, upon exercise of this Warrant, the same amount and kind of securities, cash 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*”). The Company shall not effect any Fundamental Transaction in which the Company is not the surviving entity or the Alternate Consideration includes securities of another Person unless (i) the Alternate Consideration is solely cash and the Company provides for the simultaneous “cashless exercise” of this Warrant pursuant to Section 10 below or (ii) prior to or simultaneously with the consummation thereof, any successor to the Company, surviving entity or other Person (including any purchaser of assets of the Company) 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 paragraph (c) shall similarly apply to subsequent transactions analogous of a Fundamental Transaction type.

(d) Calculations. All calculations under this Section 9 shall be made to the nearest share.

(e) 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 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.

(f) 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 or any subsidiary, (ii) authorizes or approves, 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 ten (10) 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), other than a Fundamental Transaction under clause (iii) of Section 9(c), the Company shall deliver to the Holder a notice of such Fundamental Transaction at least thirty (30) days prior to the date such Fundamental Transaction is consummated. Holder agrees to maintain any information disclosed pursuant to this Section 9(f) 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. Notwithstanding anything contained herein to the contrary, 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 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 average of the Closing Sale Prices of the shares of Common Stock (as reported by Bloomberg Financial Markets) for the five (5) consecutive Trading Days ending on the date immediately preceding the Exercise Date; 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 (provided that the Commission continues to take the position that such treatment is proper at the time of such exercise). Except as set forth in Section 12 (payment of cash in lieu of fractional shares), in no event will the exercise of this Warrant be settled in cash.

11. Limitations on Exercise.

(a) Notwithstanding anything to the contrary contained in any Section herein, except for Section 15, the number of Warrant Shares that may be acquired by the Holder upon any exercise of this Warrant (or otherwise in respect hereof) shall be limited to the extent necessary to ensure that, following such exercise (or other issuance), the total number of shares of Common Stock then beneficially owned by the Holder and its Affiliates and any other Persons whose beneficial ownership of Common Stock would be aggregated with the Holder’s for purposes of Section 13(d) of the Exchange Act, does not exceed 9.99% of the total number of then issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise), it being acknowledged by the Holder that the Company is not representing to such Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and such Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 11(a) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by such Holder) and of which a portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder’s determination of whether this Warrant is exercisable (in relation to other securities owned by such Holder) and of which portion of this Warrant is exercisable, in each case subject to such aggregate percentage limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination under this Section 11(a) as to any group status shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 11(a), 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 Form 10-Q or Form 10-K, as the case may be, (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 orally and in writing to such Holder the number of shares of Common Stock then outstanding. By written notice to the Company, which will not be effective until the sixty-first (61<sup>st</sup>) day after such notice is delivered to the Company, the Holder may increase the beneficial ownership limitation to such percentage of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant as the Holder shall determine, in its sole discretion, subject to Section 11(b), and the provisions of this Section 11(a) shall continue to apply. Upon such a change by a Holder of the beneficial ownership limitation, the beneficial ownership limitation may not be further increased by such Holder without first providing the minimum notice required by this Section 11(a). Notwithstanding the foregoing, at any time following notice of a Fundamental Transaction under Section 9(f)(ii) with respect to a Section 9(c)(iii) Fundamental Transaction, the Holder may change the beneficial ownership limitation effective immediately upon written notice to the Company and may reinstitute a beneficial ownership limitation at any time thereafter effective immediately upon written notice to the Company.

(b) This Section 11 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 of this Warrant.

12. 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.

13. 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 (a) 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 below prior to 5:30 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 or confirmed e-mail at the facsimile number or e-mail address specified below on a day that is not a Trading Day or later than 5:30 P.M., New York City time, on any Trading Day, (c) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service specifying next business day delivery, or (d) upon actual receipt by the Person to whom such notice is required to be given, if by hand delivery.

14. Warrant Agent. The Company shall initially serve as warrant agent under this Warrant. Upon thirty (30) 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 shareholders 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.

15. 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 (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 nonassessable 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 the restrictions on transfer set forth in this Warrant 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 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, 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 Holders of Warrants representing no less than a majority of the Warrant Shares obtainable upon exercise of the Warrants then outstanding.

(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 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.

ROCKET PHARMACEUTICALS, INC.

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

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 Rocket Pharmaceuticals, 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 11(a) or Section 11(b), as applicable, of the Warrant to which this notice relates.

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)

September 15, 2023

Rocket Pharmaceuticals, Inc.  
9 Cedar Brook Drive  
Cranbury, NJ 08512

Ladies and Gentlemen:

We have acted as counsel to Rocket Pharmaceuticals, Inc., a Delaware corporation (the "Company"), in connection with the issuance and sale of (i) an aggregate of 9,453,418 shares (the "Offered Shares") of the Company's common stock, par value \$0.01 per share (the "Common Stock"), (ii) pre-funded warrants (the "Pre-Funded Warrants") to purchase an aggregate of 3,126,955 shares of Common Stock, and (iii) up to an aggregate of 3,126,955 shares of Common Stock issuable upon exercise of the Pre-Funded Warrants (the "Warrant Shares") and, together with the Offered Shares, the "Shares"), pursuant to an Underwriting Agreement, dated September 12, 2023 (the "Underwriting Agreement"), by and among the Company and J.P. Morgan Securities LLC, Morgan Stanley & Co. LLC, Leerink Partners LLC, and Cowen and Company LLC, as representatives of the several underwriters named therein. In accordance with the Securities Act of 1933, as amended (the "Securities Act"), and the rules and regulations promulgated thereunder, the Company has prepared and filed with the Securities and Exchange Commission (the "SEC") on March 10, 2021 a Registration Statement on Form S-3 (Registration No. 333-253756), declared effective by the SEC on September 10, 2021 (the "Registration Statement"), including a base prospectus dated September 10, 2021, a preliminary prospectus supplement dated September 12, 2023 (the "Preliminary Prospectus Supplement"), and a final prospectus supplement dated September 12, 2023 (the "Prospectus Supplement").

For purposes of rendering this opinion, we have examined: (i) the Registration Statement; (ii) the Prospectus Supplement; (iii) the Underwriting Agreement; (iv) the form of Pre-Funded Warrant; (v) the Seventh Amended and Restated Certificate of Incorporation of the Company, as amended to date; (vi) the Amended and Restated Bylaws of the Company, as amended to date; and (vii) the resolutions adopted by the Board of Directors of the Company (the "Board of Directors") and the Pricing Committee of the Board of Directors (together, the "Resolutions") approving the Registration Statement, the Prospectus Supplement and the issuance of the Shares and the Pre-Funded Warrants. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinion set forth below, on certificates of officers of the Company.

For the purposes of this opinion letter, we have assumed that: (a) each document submitted to us is accurate and complete; (b) each such document that is an original is authentic; (c) each such document that is a copy conforms to an authentic original; (d) all signatures on each such document are genuine; and (e) the Company is and shall remain at all times a corporation duly incorporated, validly existing and in good standing under the laws of the State of Delaware. We have further assumed the legal capacity of natural persons, and we have assumed that each party to the documents we have examined or relied on has the legal capacity or authority and has satisfied all legal requirements that are applicable to that party to the extent necessary to make such documents enforceable against that party. We have not verified any of those assumptions.

In rendering our opinion below, we also have assumed that: (a) the Company will have sufficient authorized and unissued shares of Common Stock at the time of each issuance of a Warrant Share; (b) the Offered Shares and Warrant Shares will be evidenced by stock certificates or the Board of Directors will adopt a resolution providing that all shares of Common Stock shall be uncertificated in accordance with Section 158 of the Delaware General Corporation Law (the "DGCL") prior to the issuance of the Offered Shares and the Warrant Shares; (c) the issuance of each Offered Share and Warrant Share will be duly noted in the Company's stock ledger upon its issuance; and (d) the Company will receive consideration for each Offered Share and Warrant Share in an amount at least equal to the par value of such share of Common Stock and in the amount required by the Resolutions, the Underwriting Agreement and the Pre-Funded Warrant, as applicable.

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Our opinions set forth below in numbered paragraph 1, the first sentence of numbered paragraph 2, and numbered paragraph 3 are limited to the Delaware General Corporation Law (the “DGCL”) and reported judicial decisions interpreting the DGCL. Our opinion set forth below in the second sentence of numbered paragraph 2 is limited to the laws of the State of New York. We express no opinion as to the laws, rules or regulations of any other jurisdiction, including, without limitation, the federal laws of the United States of America or any state securities or blue sky laws. Our opinion is provided as of the date hereof, and we undertake no obligation to advise you of any change in any matter set forth herein.

Based on the foregoing, we are of the opinion that:

1. The Offered Shares have been duly authorized for issuance by the Company and, when issued, delivered and paid for as described in the Resolutions, the Prospectus Supplement and pursuant to the Underwriting Agreement, will be validly issued, fully paid and non-assessable.
2. The Warrants have been duly authorized for issuance by the Company. The Warrants, when issued, delivered and paid for as described in the Prospectus Supplement and pursuant to the Underwriting Agreement, will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms, subject to the effects of bankruptcy, insolvency, fraudulent transfer, reorganization, receivership, moratorium and other laws affecting the rights and remedies of creditors generally.
3. The Warrant Shares have been duly authorized for issuance by the Company and, when issued and delivered by the Company against payment therefor as described in the Resolutions and Prospectus Supplement, upon exercise of the Pre-Funded Warrants, in accordance with the terms therein and the terms thereof, will be validly issued, fully-paid and non-assessable.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Company’s Current Report on Form 8-K dated September 15, 2023 and to the references to our firm under the caption “Legal Matters” in the Preliminary Prospectus Supplement and the Prospectus Supplement. In giving this consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement, the Preliminary Prospectus Supplement or the Prospectus Supplement within the meaning of the term “expert” as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder by the SEC, nor do we admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the SEC promulgated thereunder.

Very truly yours,  
/s/ K&L Gates LLP  
K&L GATES LLP

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