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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM 8-K**

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**CURRENT REPORT**  
Pursuant to Section 13 or 15(d) of  
the Securities Exchange Act of 1934

**Date of Report (Date of earliest event reported): January 7, 2021**

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**CERECOR INC.**

(Exact name of registrant as specified in its charter)

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**Delaware**

(State or other jurisdiction of incorporation)

**001-37590**  
(Commission File Number)

**45-0705648**  
(IRS Employer Identification No.)

**540 Gaither Road, Suite 400, Rockville, Maryland 20850**

(Address of principal executive offices) (Zip Code)

**Registrant's Telephone Number, Including Area Code: (410) 522-8707**

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

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

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.001 Par Value	CERC	Nasdaq Capital 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.

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## Item 1.01. Entry into a Material Definitive Agreement

On January 7, 2021, Cerecor Inc. (the “**Company**”) entered into an underwriting agreement (the “**Underwriting Agreement**”) with Jefferies LLC as the representative (the “**Representative**”) of the underwriters named therein (the “**Underwriters**”) relating to an underwritten public offering (the “**Offering**”) of 12,323,077 shares of the Company’s common stock, \$0.001 par value per share (“**Common Stock**”) at a public offering price of \$2.60 per share of Common Stock and pre-funded warrants to purchase 1,676,923 shares of Common Stock (the “**Pre-Funded Warrants**”) at a public offering price of \$2.599 per Pre-Funded Warrant. Under the terms of the Underwriting Agreement, the Company also granted to the Underwriters an option, exercisable in whole or in part at any time for a period of 30 days from the date of the Underwriting Agreement, to purchase up to an additional 2,100,000 shares of Common Stock at a price per share of \$2.60.

Certain insiders may purchase shares of Common Stock and Pre-Funded Warrants in the Offering. Because the Company has not entered into any binding agreements or received any commitments to purchase from any insiders, such insiders may elect not to purchase any shares of Common Stock or Pre-Funded Warrants in the Offering.

The Offering is being made pursuant to the Company’s registration statement on Form S-3 (File No. 333-233978), previously filed with the U.S. Securities and Exchange Commission (the “**SEC**”) on September 27, 2019, under the Securities Act of 1933, as amended (the “**Securities Act**”), and declared effective on October 24, 2019, a base prospectus, and a prospectus supplement dated January 7, 2021.

The legal opinion, including the related consent, of Troutman Pepper Hamilton Sanders LLP relating to the issuance and sale of the shares of Common Stock and the Pre-Funded Warrants to be issued in the Offering is filed as Exhibit 5.1 hereto.

Net proceeds from the Offering are expected to be approximately \$33.6 million (excluding any sale of shares of Common Stock pursuant to the option to purchase additional shares of Common Stock granted to the Underwriters), after deducting underwriting discounts and commissions and estimated Offering expenses payable by the Company. The purchase and sale of the Common Stock and Pre-Funded Warrants, and the closing of the Offering, is expected to take place on or about January 12, 2021, subject to the satisfaction of customary closing conditions.

The Pre-Funded Warrants have an initial exercise price of \$0.001 per share and are exercisable at any time after their original issuance at the option of each holder, in such holder’s discretion, by (i) payment in full in immediately available funds for the number of shares of Common Stock purchased upon such exercise or (ii) a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of Common Stock determined according to the formula set forth in the Pre-Funded Warrant.

The Pre-Funded Warrants may not be exercised if, upon giving effect to such exercise, (i) the aggregate number of shares of Common Stock beneficially owned by the holder together with such holder’s affiliates, any person having beneficial ownership of shares of Common Stock owned by the holder as calculated in accordance with Section 13(d) of the Exchange Act, or any persons acting as a Section 13(d) group together with such holder or any of such holder’s affiliates (any such person other than holder, including any group of which Holder is a member, an “**Additional Restricted Ownership Person**”) would exceed 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the exercise, or (ii) the combined voting power of the Company’s securities beneficially owned by the holder any Additional Restricted Ownership Person would exceed 9.99% of the combined voting power of all of the Company’s securities then outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Pre-Funded Warrants. However, any holder may increase or decrease such percentage, but not in excess of 19.99%, upon at least 61 days’ prior notice from the holder to the Company.

In the event of certain fundamental transactions, the holders of the Pre-Funded Warrants will be entitled to receive upon exercise of the Pre-Funded Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Pre-Funded Warrants immediately prior to such fundamental transaction without regard to any limitations on exercise contained in the Pre-Funded Warrants.

The Underwriting Agreement contains customary representations, warranties and covenants made by the Company. It also provides for customary indemnification by each of the Company and the Underwriters, severally and not jointly, for losses, claims, damages, or liabilities arising out of or in connection with the Offering, including for liabilities under the Securities Act of 1933, as amended, other obligations of the parties and termination provisions. In addition, pursuant to the terms of the Underwriting Agreement, each of the Company’s directors and executive officers have entered into “lock-up” agreements with the Underwriters that generally prohibit, without the prior written consent of the Representative, the sale, transfer or other disposition of securities of the Company through the period ending 90 days from the date of the Underwriting Agreement.

The foregoing description of the Underwriting Agreement does not purport to be complete and is qualified in its entirety by reference to the copy of the Underwriting Agreement, which is filed as Exhibit 1.1 to this Current Report on Form 8-K.

The representations, warranties and covenants contained in the Underwriting Agreement were made only for purposes of such agreement and as of specific dates, were solely for the benefit of the parties to the Underwriting Agreement, and may be subject to limitations agreed upon by the contracting parties. Accordingly, the Underwriting Agreement is incorporated herein by reference only to provide investors with information regarding the terms of the Underwriting Agreement, and not to provide investors with any other factual information regarding the Company or its business, and should be read in conjunction with the disclosures in the Company's periodic reports and other filings with the SEC.

A copy of the Form of Pre-Funded Warrants is attached as Exhibit 4.1 hereto and is incorporated herein by reference. The foregoing description of the Pre-Funded Warrants does not purport to be complete and is qualified in its entirety by reference to such exhibit.

#### *Forward-Looking Statements*

This Current Report on Form 8-K may include forward-looking statements made within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. The words "may," "will," "could," "would," "should," "expect," "intend," "plan," "anticipate," "believe," "estimate," "predict," "project," "potential," "continue," "ongoing" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. While the Company believes its plans, intentions and expectations reflected in those forward-looking statements are reasonable, these plans, intentions or expectations may not be achieved. The Company's actual results, performance or achievements could differ materially from those contemplated, expressed or implied by the forward-looking statements. For information about the factors that could cause such differences, please refer to the Company's Annual Report on Form 10-K for the year ended December 31, 2019, including the information discussed under the captions "Part I, Item 1A - Risk Factors" and "Part II, Item 7 - Management's Discussion and Analysis of Financial Condition and Results of Operations," as well as the Company's various other filings with the SEC. Given these uncertainties, you should not place undue reliance on these forward-looking statements. The Company assumes no obligation to update any forward-looking statement.

#### **Item 8.01. Other Events.**

On January 7, 2021, the Company issued a press release announcing the launch of the Offering and on January 7, 2021, the Company issued a press release announcing the pricing of the Offering. A copy of the launch and pricing press releases are attached as Exhibit 99.1 and Exhibit 99.2, respectively to this Current Report on Form 8-K and are incorporated herein by reference.

Attached hereto as Exhibit 99.3 and incorporated herein by reference are supplemental risk factors to the risk factors set forth in Item 1A of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2019, and the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2020. The risk factors set forth on Exhibit 99.3 should be read in conjunction with the risk factors described in such Form 10-K and Form 10-Q.

#### **Item 9.01. Financial Statements and Exhibits.**

##### *(d) Exhibits.*

<b>Exhibit No.</b>	<b>Description</b>
1.1	<a href="#">Underwriting Agreement, dated January 7, 2021, by and between Cerecor Inc. and Jefferies LLC</a>
4.1	<a href="#">Form of Pre-Funded Warrant.</a>
5.1	<a href="#">Opinion of Troutman Pepper Hamilton Sanders LLP.</a>
23.1	<a href="#">Consent of Troutman Pepper Hamilton Sanders LLP (included in Exhibit 5.1).</a>
99.1	<a href="#">Press Release, dated January 7, 2021.</a>
99.2	<a href="#">Press Release, dated January 7, 2021.</a>
99.3	<a href="#">Supplemental Risk Factors.</a>

**SIGNATURE**

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

**CERECOR INC.**

Date: January 8, 2021

By: /s/ Christopher Sullivan  
Christopher Sullivan  
Interim Chief Financial Officer

12,323,077 Shares  
Pre-Funded Warrants to Purchase 1,676,923 Shares  
Cerecor Inc.

UNDERWRITING AGREEMENT

January 7, 2021

JEFFERIES LLC

As Representative of the several Underwriters  
c/o JEFFERIES LLC  
520 Madison Avenue  
New York, New York 10022  
Ladies and Gentlemen:

**Introductory.** Cerecor Inc., a Delaware corporation (the “**Company**”), proposes to issue and sell to the several underwriters named in Schedule A (the “**Underwriters**”) (i) an aggregate of 12,323,077 shares of its common stock, par value \$0.001 per share of the Company (the “**Shares**”) and (ii) pre-funded warrants to purchase up to 1,676,923 Shares at an exercise price equal to \$0.001 per share (the “**Pre-Funded Warrants**”). The 12,323,077 Shares to be sold by the Company are called the “**Firm Shares**.” In addition, the Company has granted to the Underwriters an option to purchase up to an additional 2,100,000 Shares as provided in Section 2. The additional 2,100,000 Shares to be sold by the Company pursuant to such option are collectively called the “**Optional Shares**.” The Firm Shares and, if and to the extent such option is exercised, the Optional Shares are collectively called the “**Offered Shares**.” The Offered Shares and the Pre-Funded Warrants are herein referred to as the “**Securities**”. The Shares issuable upon exercise of the Pre-Funded Warrants are herein referred to as the “**Warrant Shares**”. Jefferies LLC (“**Jefferies**”) has agreed to act as representative of the several Underwriters (in such capacity, the “**Representative**”) in connection with the offering and sale of the Securities. To the extent there are no additional underwriters listed on Schedule A, the term “Representative” as used herein shall mean you, as Underwriter, and the term “Underwriters” shall mean either the singular or the plural, as the context requires.

The Company has prepared and filed with the Securities and Exchange Commission (the “**Commission**”) a shelf registration statement on Form S-3, File No. 333233978, including a base prospectus (the “**Base Prospectus**”) to be used in connection with the public offering and sale of the Securities. Such registration statement, as amended, including the financial statements, exhibits and schedules thereto, in the form in which it became effective under the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder (collectively, the “**Securities Act**”), including all documents incorporated or deemed to be incorporated by reference therein and any information deemed to be a part thereof at the time of effectiveness pursuant to Rule 430A or 430B under the Securities Act, is called the “**Registration Statement**.” Any registration statement filed by the Company pursuant to Rule 462(b) under the Securities Act in connection with the offer and sale of the Securities is called the “**Rule 462(b) Registration Statement**,” and from and after the date and time of filing of any such Rule 462(b) Registration Statement the term “Registration Statement” shall include the Rule 462(b) Registration Statement. The preliminary prospectus supplement dated January 7, 2021 describing the Securities and the offering thereof (the “**Preliminary Prospectus Supplement**”), together with the Base Prospectus, is called the “**Preliminary Prospectus**,” and the Preliminary Prospectus and any other prospectus supplement to the Base Prospectus in preliminary form that describes the Securities and the offering thereof and is used

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prior to the filing of the Prospectus (as defined below), together with the Base Prospectus, is called a “**preliminary prospectus**.” As used herein, the term “**Prospectus**” shall mean the final prospectus supplement to the Base Prospectus that describes the Securities and the offering thereof (the “**Final Prospectus Supplement**”), together with the Base Prospectus, in the form first used by the Underwriters to confirm sales of the Securities or in the form first made available to the Underwriters by the Company to meet requests of purchasers pursuant to Rule 173 under the Securities Act. References herein to the Preliminary Prospectus, any preliminary prospectus and the Prospectus shall refer to both the prospectus supplement and the Base Prospectus components of such prospectus. As used herein, “**Applicable Time**” is 7:00 p.m. (New York City time) on January 7, 2021. As used herein, “**free writing prospectus**” has the meaning set forth in Rule 405 under the Securities Act, and “**Time of Sale Prospectus**” means the Preliminary Prospectus, as amended or supplemented immediately prior to the Applicable Time, together with the free writing prospectuses, if any, identified in Schedule B hereto. As used herein, “**Road Show**” means a “road show” (as defined in Rule 433 under the Securities Act) relating to the offering of the Securities contemplated hereby that is a “written communication” (as defined in Rule 405 under the Securities Act).

All references in this Agreement to the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus and the Prospectus shall include the documents incorporated or deemed to be incorporated by reference therein. All references in this Agreement to financial statements and schedules and other information which are “contained,” “included” or “stated” in, or “part of” the Registration Statement, the Rule 462(b) Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Prospectus or the Prospectus, and all other references of like import, shall be deemed to mean and include all such financial statements and schedules and other information which is or is deemed to be incorporated by reference in the Registration Statement, the Rule 462(b) Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Prospectus or the Prospectus, as the case may be. All references in this Agreement to amendments or supplements to the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Prospectus or the Prospectus shall be deemed to mean and include the filing of any document under the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (collectively, the “**Exchange Act**”) that is or is deemed to be incorporated by reference in the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, or the Prospectus, as the case may be. All references in this Agreement to (i) the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus or the Prospectus, any amendments or supplements to any of the foregoing, or any free writing prospectus, shall include any copy thereof filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System (“**EDGAR**”) and (ii) the Prospectus shall be deemed to include any “electronic Prospectus” provided for use in connection with the offering of the Securities as contemplated by Section 3(n) of this Agreement.

The Company hereby confirms its agreements with the Underwriters as follows:

**Section 1. Representations and Warranties.** The Company hereby represents, warrants and covenants to each Underwriter, as of the date of this Agreement, as of the First Closing Date (as hereinafter defined) and as of each Option Closing Date (as hereinafter defined), if any, as follows:

(a) The Company was at the time of the filing of the Registration Statement eligible to use Form S-3. As of the date of this Agreement, the Company is eligible to use Form S-3, including the transaction requirements set forth in General Instruction I.B.1 of such form. The Company filed with the Commission the Registration Statement on such Form S-3, including a Base Prospectus, for registration

under the Securities Act of the offering and sale of the Securities, and the Company has prepared and used a Preliminary Prospectus in connection with the offer and sale of the Securities. When the Registration Statement or any amendment thereof or supplement thereto was or is declared effective and as of the date of the most recent amendment to the Registration Statement, it (i) complied or will comply, in all material respects, with the requirements of the Securities Act and the Exchange Act and (ii) did not or will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein not misleading. When any preliminary prospectus or Prospectus was first filed with the Commission (whether filed as part of the Registration Statement or any amendment thereto or pursuant to Rule 424(b) under the Securities Act) and when any amendment thereof or supplement thereto was first filed with the Commission, such Preliminary Prospectus or Prospectus, as amended or supplemented, complied in all material respects with the applicable provisions of the Securities Act and did not or will not, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein not misleading. If applicable, each Preliminary Prospectus and the Prospectus delivered to the Underwriters for use in connection with this offering was identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T. Notwithstanding the foregoing, none of the representations and warranties in this paragraph 1(a) shall apply to statements in, or omissions from, the Registration Statement, any preliminary prospectus or the Prospectus made in reliance upon, and in conformity with, information herein or otherwise furnished in writing by the Representative on behalf of the several Underwriters specifically for use in the Registration Statement, any preliminary prospectus or the Prospectus. With respect to the preceding sentence, the Company acknowledges that the only information furnished in writing by the Representative for use in the Registration Statement, any preliminary prospectus or the Prospectus are the statements contained in the first sentence of the third paragraph under the caption “Underwriting” regarding market making, the concession figure in the first sentence of the fifth paragraph under the caption “Underwriting,” the first sentence of the 14th paragraph under the caption “Underwriting” regarding stabilizing activities and the first sentence of the 20th paragraph under the caption “Underwriting” regarding internet distribution in the Prospectus (collectively, the “**Underwriting Information**”).

(b) As of the Applicable Time, the price to the public and the number of shares offered and sold, as indicated on the cover page of the Prospectus and the Time of Sale Prospectus, all considered together (collectively, the “**Pricing Disclosure Package**”) did not, does not and will not include any untrue statement of a material fact or omitted, omits or will omit to state any 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 this representation and warranty shall not apply to statements in or omissions in the Pricing Disclosure Package made in reliance upon and in conformity with the Underwriting Information.

(c) Each free writing prospectus, including any Road Show (i) is identified in Schedule B hereto and (ii) complied when issued, and complies, in all material respects with the requirements of the Securities Act and the Exchange Act.

(d) The Registration Statement is effective under the Securities Act and no stop order preventing or suspending the effectiveness of the Registration Statement or suspending or preventing the use of any preliminary prospectus, the Prospectus or any free writing prospectus, has been issued by the Commission and no proceedings for that purpose have been instituted or are threatened under the Securities Act. Any required filing of any preliminary prospectus and/or the Prospectus and any supplement thereto pursuant to Rule 424(b) under the Securities Act has been or will be made in the

manner and within the time period required by such Rule 424(b). Any material required to be filed by the Company pursuant to Rule 433(d) under the Securities Act has been or will be made in the manner and within the time period required by the Securities Act.

(e) The documents incorporated by reference in the Registration Statement, any preliminary prospectus and the Prospectus, at the time they became effective or were filed with the Commission, as the case may be, complied in all material respects with the requirements of the Securities Act or the Exchange Act, as applicable, and none of such documents contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, and any further documents so filed and incorporated by reference in the Registration Statement, any preliminary prospectus and the Prospectus, when such documents become effective or are filed with the Commission, as the case may be, will conform in all material respects to the requirements of the Securities Act or the Exchange Act, as applicable, and will 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 light of the circumstances under which they are made, not misleading.

(f) Each 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 Representative as described in the next sentence, 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 Time of Sale Prospectus or the Prospectus.

(g) If at any time following issuance of an free writing prospectus there occurred or occurs an event or development as a result of which such free writing prospectus conflicted or would conflict with the information contained in the Registration Statement, the Time of Sale Prospectus or the Prospectus 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 Representative and has promptly amended or will promptly amend or supplement, at its own expense, such free writing prospectus to eliminate or correct such conflict, untrue statement or omission.

(h) The financial statements of the Company (including all notes and schedules thereto) included in the Registration Statement, the Time of Sale Prospectus and Prospectus present fairly the financial position of the Company and its consolidated subsidiaries at the dates indicated and the statement of operations, stockholders' equity and cash flows of the Company and its consolidated subsidiaries for the periods specified; and such financial statements and related schedules and notes thereto, and the unaudited financial information filed with the Commission as part of the Registration Statement, have been prepared in conformity with generally accepted accounting principles, consistently applied throughout the periods involved, it being understood that unaudited interim financial statements are subject to normal year-end adjustments and except as may be expressly stated in the related notes thereto or to the extent that unaudited interim financial statements do not contain certain footnotes as permitted by the applicable rules of the Commission. The selected financial data included in the Time of Sale Prospectus and Prospectus present fairly the information shown therein as at the respective dates and for the respective periods specified and have been presented on a basis consistent with the consolidated financial statements set forth in the Prospectus and other financial information. The pro forma financial information and the related notes thereto included in the Registration Statement, the Time of Sale Prospectus and the Prospectus present fairly the information shown therein, have been prepared in accordance with the Commission's



rules and guidelines with respect to pro forma financial information and have been properly compiled on the bases described therein, and the assumptions used in the preparation thereof are reasonable and the adjustments used therein are appropriate to give effect to the transactions and circumstances referred to therein.

(i) Ernst & Young, LLP (the “**Auditor**”), whose reports are filed with the Commission as a part of the Registration Statement, are and, during the periods covered by their reports, were independent public accountants as required by the Securities Act.

(j) The Company and each of its subsidiaries, including each entity (corporation, partnership, joint venture, association or other business organization) controlled directly or indirectly by the Company (each, a “**subsidiary**”), is duly organized, validly existing and, as to the subsidiaries on Schedule C attached hereto (the “**Applicable Subsidiaries**”), in good standing under the laws of their respective jurisdictions of incorporation or organization and each subsidiary has all requisite power and authority to carry on its business as is currently being conducted as described in the Time of Sale Prospectus and the Prospectus, and to own, lease and operate its properties. All of the issued shares of capital stock of, or other ownership interests in, each subsidiary have been duly and validly authorized and issued and are fully paid and nonassessable and are owned, directly or indirectly, by the Company, free and clear of any lien, charge, mortgage, pledge, security interest, claim, limitation on voting rights, equity, trust or other encumbrance, preferential arrangement, defect or restriction of any kind whatsoever. The Company and each of its Applicable Subsidiaries is duly qualified to do business and is in good standing as a foreign corporation in each jurisdiction in which the nature of the business conducted by it or location of the assets or properties owned, leased or licensed by it requires such qualification, except for such jurisdictions where the failure to so qualify individually or in the aggregate would not have a material adverse effect on the assets, properties, condition, financial or otherwise, or in the results of operations, business affairs or business prospects of the Company and its subsidiaries considered as a whole (a “**Material Adverse Effect**”); and to the Company’s knowledge, no proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing, or seeking to revoke, limit or curtail, such power and authority or qualification. The Company has no “significant subsidiaries” (as such term is defined in Rule 1-02 of Regulation S-X) other than the Applicable Subsidiaries.

(k) The Registration Statement initially became effective within three years of the date hereof. If, immediately prior to the third anniversary of the initial effective date of the Registration Statement, any of the Securities remain unsold by the Underwriters, the Company will, prior to that third anniversary file, if it has not already done so, a new shelf registration statement relating to the Securities, in a form satisfactory to the Representative, will use its best efforts to cause such registration statement to be declared effective within 180 days after that third anniversary, and will take all other action necessary or appropriate to permit the public offering and sale of the Securities to continue as contemplated in the expired Registration Statement. References herein to the registration statement relating to the Securities shall include such new shelf registration statement.

(l) The Company and each of its subsidiaries has all requisite corporate power and authority, and all necessary authorizations, approvals, consents, orders, licenses, certificates and permits of and from all governmental or regulatory bodies or any other person or entity (collectively, the “**Permits**”), to own, lease and license its assets and properties and conduct its business, all of which are valid and in full force and effect, except where the lack of such Permits, individually or in the aggregate, would not have a Material Adverse Effect. The Company and each of its subsidiaries has fulfilled and performed in all material respects all of its obligations with respect to such Permits and no event has occurred that allows, or after notice or lapse of time would allow, revocation or termination thereof or results in any other

material impairment of the rights of the Company thereunder. Except as may be required under the Securities Act, no other Permits are required to enter into, deliver and perform this Agreement and to issue and sell the Securities.

**(m)** (i) At the earliest time after the filing of the Registration Statement that the Company or another offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2) under the Securities Act) of the Securities and (ii) as of the date hereof, the Company was not and is not an “ineligible issuer,” as defined in Rule 405 under the Securities Act, including (but not limited to) the Company or any other subsidiary in the preceding three years not having been convicted of a felony or misdemeanor or having been made the subject of a judicial or administrative decree or order as described in Rule 405 under the Securities Act.

**(n)** The Company and each of its subsidiaries owns or possesses legally enforceable rights to use all patents, patent rights, inventions, trademarks, trademark applications, trade names, service marks, copyrights, copyright applications, licenses, know-how and other similar rights and proprietary knowledge (collectively, “**Intangibles**”) necessary for the conduct of its business. Neither the Company nor any of its subsidiaries has received any notice of, or is not aware of, any infringement of or conflict with asserted rights of others with respect to any Intangibles.

**(o)** The Company and each of its subsidiaries has good and marketable title in fee simple to all real property, and good and marketable title to all other property owned by it, in each case free and clear of all liens, encumbrances, claims, security interests and defects, except such as do not materially affect the value of such property and do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries. All property held under lease by the Company and its subsidiaries is held by them under valid, existing and enforceable leases, free and clear of all liens, encumbrances, claims, security interests and defects, except such as are not material and do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries.

**(p)** Subsequent to the respective dates as of which information is given in the Registration Statement, the Time of Sale Prospectus and the Prospectus, (i) there has not been any event which could reasonably be expected to have a Material Adverse Effect; (ii) neither the Company nor any of its subsidiaries has sustained any loss or interference with its assets, businesses or properties (whether owned or leased) from fire, explosion, earthquake, flood or other calamity, whether or not covered by insurance, or from any labor dispute or any court or legislative or other governmental action, order or decree which could reasonably be expected to have a Material Adverse Effect; and (iii) since the date of the latest balance sheet included in the Registration Statement and the Prospectus, neither the Company nor its subsidiaries has (A) issued any securities or incurred any liability or obligation, direct or contingent, for borrowed money, except such liabilities or obligations incurred in the ordinary course of business or (B) declared or paid any dividend or made any distribution on any shares of its stock or redeemed, purchased or otherwise acquired or agreed to redeem, purchase or otherwise acquire any shares of its capital stock.

**(q)** There is no document, contract or other agreement required to be described in the Registration Statement, the Time of Sale Prospectus or the Prospectus or to be filed as an exhibit to the Registration Statement which is not described or filed as required by the Securities Act. Each description of a contract, document or other agreement in the Registration Statement, the Time of Sale Prospectus or the Prospectus accurately reflects in all material respects the terms of the underlying contract, document or other agreement. Each contract, document or other agreement described in the Registration Statement, the Time of Sale Prospectus or the Prospectus or listed in the Exhibits to the Registration Statement or incorporated by reference is in full force and effect and is valid and enforceable by and against the

Company or its subsidiary, as the case may be, in accordance with its terms. Neither the Company nor any of its subsidiaries, if a subsidiary is a party, nor to the Company's knowledge, any other party is in default in the observance or performance of any term or obligation to be performed by it under any such agreement, and no event has occurred which with notice or lapse of time or both would constitute such a default, in any such case which default or event, individually or in the aggregate, could reasonably be expected to have a Material Adverse Effect.

(r) The statistical and market related data included in the Registration Statement, the Time of Sale Prospectus or the Prospectus are based on or derived from sources that the Company believes to be reliable and accurate.

(s) Neither the Company nor any subsidiary (i) is in violation of its certificate or articles of incorporation, by-laws, certificate of formation, limited liability company agreement, partnership agreement or other organizational documents, (ii) is in default under, and no event has occurred which, with notice or lapse of time, or both, would constitute a default under, or result in the creation or imposition of any lien, charge, mortgage, pledge, security interest, claim, limitation on voting rights, equity, trust or other encumbrance, preferential arrangement, defect or restriction of any kind whatsoever, upon, any property or assets of the Company or any subsidiary pursuant to, any bond, debenture, note, indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which it is a party or by which it is bound or to which any of its properties or assets is subject or (iii) is in violation of any statute, law, rule, regulation, ordinance, directive, judgment, decree or order of any judicial, regulatory or other legal or governmental agency or body, foreign or domestic, except (in the case of clauses (ii) and (iii) above) for violations or defaults that could not (individually or in the aggregate) reasonably be expected to have a Material Adverse Effect.

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

(u) Neither the execution, delivery and performance of this Agreement by the Company nor the consummation of any of the transactions contemplated hereby (including, without limitation, the issuance and sale by the Company of the Securities and, upon exercise of the Pre-Funded Warrants, the issuance of the Warrant Shares) will give rise to a right to terminate or accelerate the due date of any payment due under, or conflict with or result in the breach of any term or provision of, or constitute a default (or an event which with notice or lapse of time or both would constitute a default) under, or require any consent or waiver under, or result in the execution or imposition of any lien, charge or encumbrance upon any properties or assets of the Company or its subsidiaries pursuant to the terms of, any indenture, mortgage, deed of trust or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which either the Company or its subsidiaries or any of their properties or businesses is bound, or any franchise, license, permit, judgment, decree, order, statute, rule or regulation applicable to the Company or any of its subsidiaries or violate any provision of the charter or by-laws of the Company or any of its subsidiaries, except for such consents or waivers which have already been obtained and are in full force and effect and except for any of the foregoing that could not (individually or in the aggregate) reasonably be expected to have a Material Adverse Effect.

(v) The Offered Shares have been duly authorized for issuance by the Company. All of the issued and outstanding Shares have been duly and validly issued and are fully paid and nonassessable. There are no statutory preemptive or other similar rights to subscribe for or to purchase or acquire any Shares or shares of capital stock of any of its subsidiaries or any such rights pursuant to its charter or by-laws or any agreement or instrument to or by which the Company or any of its subsidiaries is a party or bound. The Offered Shares, when issued and sold pursuant to this Agreement, will be duly and validly

issued, fully paid and nonassessable, and none of them will be issued in violation of any preemptive or other similar right. The Pre-Funded Warrants have been duly authorized for issuance by the Company. The Pre-Funded Warrants, when executed and delivered by the Company pursuant to this Agreement, will be valid and binding agreements of the Company, enforceable against the Company in accordance with their terms, except as the enforcement thereof may be limited by 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 Shares have been duly authorized and validly reserved for issuance upon exercise of the Pre-Funded Warrants in a number sufficient to meet the current exercise requirements and, when issued and delivered upon exercise of the Pre-Funded Warrants in accordance therewith, will be duly and validly issued, fully paid and nonassessable; and the issuance of the Warrant Shares is not subject to any preemptive or similar rights. Except as disclosed in the Registration Statement, the Time of Sale Prospectus and the Prospectus, there is no outstanding option, warrant or other right calling for the issuance of, and there is no commitment, plan or arrangement to issue, any share of stock of the Company or any of its subsidiaries or any security convertible into, or exercisable or exchangeable for, such stock. To the Company's knowledge, the grant of all options to acquire Shares were validly issued and properly approved by the board of directors of the Company in material compliance with all applicable laws. The Shares and the Offered Shares conform, and, when issued and delivered upon exercise of the Pre-Funded Warrants in accordance therewith, the Warrant Shares will conform, in all material respects to all statements in relation thereto contained in the Registration Statement and the Time of Sale Prospectus and the Prospectus. All outstanding shares of capital stock of each of the Company's subsidiaries have been duly authorized and validly issued and are fully paid and nonassessable, and are owned directly by the Company or by another wholly-owned subsidiary of the Company free and clear of any security interests, liens, encumbrances, equities or claims, other than those described in the Time of Sale Prospectus and the Prospectus.

(w) The Company and its subsidiaries have been and are in compliance with all applicable laws, rules and regulations, except where failure to be so in compliance would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. The Company and its subsidiaries maintain internal policies and procedures designed to ensure that they shall remain in material compliance with all applicable laws, rules and regulations applicable to the Company, and such internal policies and procedures are reviewed periodically.

(x) No person or entity has any right, which has not been waived, to have any security owned by such holder included in the Registration Statement or to demand registration of any security owned by such holder for a period of 180 days after the date of this Agreement. Each director and executive officer of the Company and each stockholder of the Company listed on Exhibit D hereto has delivered to the Representative his written lock-up agreement in the form attached to this Agreement as Exhibit C hereto ("**Lock-Up Agreement**").

(y) There are no legal or governmental proceedings pending to which the Company or any of its subsidiaries is a party or of which any property of the Company or any of its subsidiaries is the subject which, if determined adversely to the Company or any of its subsidiaries could individually or in the aggregate have a Material Adverse Effect; and, to the knowledge of the Company, no such proceedings are threatened or contemplated by governmental authorities or threatened by others.

(z) All necessary corporate action has been duly and validly taken by the Company to authorize the execution, delivery and performance of this Agreement and the issuance and sale of the Securities by the Company.

**(aa)** Neither the Company nor any of its subsidiaries is involved in any labor dispute nor, to the knowledge of the Company, is any such dispute threatened, which dispute could reasonably be expected to have a Material Adverse Effect. The Company is not aware of any threatened or pending litigation between the Company or its subsidiaries and any of its executive officers which, if adversely determined, could reasonably be expected to have a Material Adverse Effect and has no reason to believe that such officers will not remain in the employment of the Company.

**(bb)** No transaction has occurred between or among the Company and any of its officers or directors, shareholders or any affiliate or affiliates of any such officer or director or shareholder that is required to be described in and is not described in the Registration Statement, the Time of Sale Prospectus and the Prospectus.

**(cc)** The Company has not taken, nor will it take, directly or indirectly, any action designed to or which might reasonably be expected to cause or result in, or which has constituted or which might reasonably be expected to constitute, the stabilization or manipulation of the price of the Shares or of any “reference security” (as defined in Rule 100 of Regulation M under the Exchange Act (“**Regulation M**”)) with respect to the Shares, whether to facilitate the sale or resale of the Securities or otherwise, and has taken no action which would directly or indirectly violate Regulation M.

**(dd)** There are no business relationships or related-party transactions involving the Company or any of its subsidiaries or any other person required to be described in the Registration Statement, the Time of Sale Prospectus or the Prospectus that have not been described as required.

**(ee)** The Company and each of its subsidiaries has filed all federal, state, local and foreign tax returns which are required to be filed through the date hereof, which returns are true and correct in all material respects or has received timely extensions thereof, and other than has been described in the Registration Statement, the Time of Sale Prospectus or the Prospectus has paid all taxes shown on such returns and all assessments received by it to the extent that the same are material and have become due. There are no tax audits or investigations pending, which if adversely determined, could reasonably be expected to have a Material Adverse Effect; nor are there any material proposed additional tax assessments against the Company or any of its subsidiaries.

**(ff)** The Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Shares under the Exchange Act or the quotation of the Shares on The Nasdaq Capital Market (the “**Nasdaq**”), nor has the Company received any notification that the Commission or The Nasdaq Stock Market is contemplating terminating such registration or quotation.

**(gg)** The books, records and accounts of the Company and its subsidiaries accurately and fairly reflect, the transactions in, and dispositions of, the assets of, and the results of operations of, the Company and its subsidiaries. The Company and each of its subsidiaries maintains a system of internal accounting controls sufficient 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 accordance with generally accepted accounting principles and to maintain asset accountability, (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 the existing assets at reasonable intervals and appropriate action is taken with respect to any differences and (v) the interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement, the Time of Sale Prospectus and the Prospectus fairly presents the information

called for in all material respects and is prepared in accordance with the Commission's rules and guidelines applicable thereto.

**(hh)** The Company has established and maintains disclosure controls and procedures (as such term is defined in Rule 13a-15 under the Exchange Act), which: (i) are designed to ensure that material information relating to the Company is made known to the Company's principal executive officer and its principal financial officer by others within the Company, particularly during the periods in which the periodic reports required under the Exchange Act are required to be prepared; (ii) provide for the periodic evaluation of the effectiveness of such disclosure controls and procedures at the end of the periods in which the periodic reports are required to be prepared; and (iii) are effective in all material respects to perform the functions for which they were established.

**(ii)** The Auditor and the audit committee of the Board of Directors of the Company have been advised of: (i) all significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting which have adversely affected or are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal controls over financial reporting.

**(jj)** Except as described in the Time of Sale Prospectus and the Prospectus and as preapproved in accordance with the requirements set forth in Section 10A of the Exchange Act, the Auditor has not been engaged by the Company to perform any "prohibited activities" (as defined in Section 10A of the Exchange Act).

**(kk)** Except as described in the Time of Sale Prospectus and the Prospectus, there are no material off-balance sheet arrangements (as defined in Item 303 of Regulation S-K) that have or are reasonably likely to have a material current or future effect on the Company's financial condition, revenues or expenses, changes in financial condition, results of operations, liquidity, capital expenditures or capital resources.

**(ll)** The Company's board of directors has validly appointed an audit committee whose composition satisfies the requirements of Rule 5605 of The Nasdaq Stock Market and the board of directors and/or the audit committee has adopted a charter that satisfies the requirements of Rule 5605 of The Nasdaq Stock Market. The audit committee has reviewed the adequacy of its charter within the past twelve months.

**(mm)** The Company is in compliance with all applicable provisions of the Sarbanes-Oxley Act of 2002.

**(nn)** The Company and its subsidiaries are insured against such losses and risks in such amounts as are customary in the businesses in which they are engaged or propose to engage after giving effect to the transactions described in the Time of Sale Prospectus and the Prospectus; all policies of insurance and fidelity or surety bonds insuring the Company or any of its subsidiaries or the Company's or its subsidiaries' respective businesses, assets, employees, officers and directors are in full force and effect; and the Company and each of its subsidiaries are in compliance with the terms of such policies and instruments in all material respects. Neither the Company nor any of its subsidiaries has been denied any insurance coverage which it has sought or for which it has applied.

**(oo)** Each approval, consent, order, authorization, designation, declaration or filing of, by or with any regulatory, administrative or other governmental body necessary in connection with the execution

and delivery by the Company of this Agreement and the consummation of the transactions herein contemplated required to be obtained or performed by the Company (except such additional steps as may be necessary to qualify the Securities for public offering by the Underwriters under the state securities or Blue Sky laws) has been obtained or made and is in full force and effect.

**(pp)** There are no affiliations with member firms of the Financial Industry Regulatory Authority, Inc. (“**FINRA**”) among the Company’s officers, directors or, to the best of the knowledge of the Company, any five percent or greater stockholder of the Company, except as set forth in the Registration Statement or otherwise disclosed in writing to the Representative.

**(qq)** (i) Each of the Company and each of its subsidiaries is in compliance in all material respects with all rules, laws and regulation relating to the use, treatment, storage and disposal of toxic substances and protection of health or the environment (“**Environmental Law**”) which are applicable to its business; (ii) neither the Company nor its subsidiaries has received any notice from any governmental authority or third party of an asserted claim under Environmental Laws; (iii) each of the Company and each of its subsidiaries has received all permits, licenses or other approvals required of it under applicable Environmental Laws to conduct its business and is in compliance with all terms and conditions of any such permit, license or approval; (iv) to the Company’s knowledge, no facts currently exist that will require the Company or any of its subsidiaries to make future material capital expenditures to comply with Environmental Laws; and (v) no property which is or has been owned, leased or occupied by the Company or its subsidiaries has been designated as a Superfund site pursuant to the Comprehensive Environmental Response, Compensation of Liability Act of 1980, as amended (42 U.S.C. Section 9601, *et seq.*) or otherwise designated as a contaminated site under applicable state or local law. Neither the Company nor any of its subsidiaries has been named as a “potentially responsible party” under the CER, CLA 1980.

**(rr)** The Company is not and, after giving effect to the offering and sale of the Securities and, upon exercise of the Pre-Funded Warrants, the issuance of the Warrant Shares, and the application of proceeds thereof as described in the Time of Sale Prospectus and the Prospectus, will not be an “investment company” within the meaning of the Investment Company Act of 1940, as amended (the “**Investment Company Act**”).

**(ss)** The Company or, to the knowledge of the Company, any other person associated with or acting on behalf of the Company including, without limitation, any director, officer, agent or employee of the Company or its subsidiaries, has not, directly or indirectly, while acting on behalf of the Company or its subsidiaries (i) used any corporate funds for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity; (ii) made any unlawful payment to foreign or domestic government officials or employees or to foreign or domestic political parties or campaigns from corporate funds; (iii) violated any provision of the Foreign Corrupt Practices Act of 1977, as amended; or (iv) made any other unlawful payment.

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

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

(vv) Except pursuant to this Agreement, there is no broker, finder or other party that is entitled to receive from the Company any brokerage or finder’s fee or other fee or commission as a result of any transactions contemplated by this Agreement.

(ww) Each financial or operational projection or other “forward-looking statement” (as defined by Section 27A of the Securities Act or Section 21E of the Exchange Act) contained in the Registration Statement, the Time of Sale Prospectus or the Prospectus (i) was so included by the Company in good faith and with reasonable basis after due consideration by the Company of the underlying assumptions, estimates and other applicable facts and circumstances and (ii) is accompanied by meaningful cautionary statements identifying those factors that would reasonably be expected to cause actual results to differ materially from those in such forward-looking statement. No such statement was made with the knowledge of an executive officer or director of the Company that is was false or misleading.

(xx) Except as described in the Time of Sale Prospectus and the Prospectus, the Company has not sold or issued any Shares during the six-month period preceding the date of the Prospectus, including any sales pursuant to Rule 144A under, or Regulations D or S of, the Securities Act, other than shares issued pursuant to employee benefit plans, qualified stock options plans or other employee compensation plans or pursuant to outstanding options, rights or warrants.

(yy) The Company has fulfilled its obligations, if any, under the minimum funding standards of Section 302 of the U.S. Employee Retirement Income Security Act of 1974 (“ERISA”) and the regulations and published interpretations thereunder with respect to each “plan” as defined in Section 3(3) of ERISA and such regulations and published interpretations in which its employees are eligible to participate and each such plan is in compliance in all material respects with the presently applicable provisions of ERISA and such regulations and published interpretations. No “Reportable Event” (as defined in 12 ERISA) has occurred with respect to any “Pension Plan” (as defined in ERISA) for which the Company could have any liability.

(zz) None of the Company, its directors or its officers has distributed nor will distribute prior to the later of (i) the First Closing Date or the Option Closing Date, and (ii) completion of the distribution of the Securities, any offering material in connection with the offering and sale of the Securities other than any preliminary prospectus, the Prospectus, the Registration Statement and other materials, if any, permitted by the Securities Act.

(aaa) Except as disclosed in the Registration Statement, the Time of Sale Prospectus or the Prospectus, (i)(x) the Company has no knowledge of any security breach or other compromise of the Company’s information technology and computer systems, networks, hardware, software, data and databases (including the data and information of its customers, employees, suppliers, vendors and any third party data maintained by or on behalf of the Company) (collectively, “IT Systems and Data”) and (y) the Company has not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any security breach or other compromise to its IT Systems and Data, except for



those instances referred to in clauses (i)(x) and (i)(y) that have been remedied without material cost or liability to the Company or without the duty to notify any other person or any incidents under internal review or investigations relating to the same; (ii) the Company is presently in compliance with all applicable laws or statutes and all applicable judgments, orders, rules and regulations of any governmental authority relating to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification; and (iii) the Company has implemented commercially reasonable backup and disaster recovery technology, except, in each of clauses (ii) and (iii), where such noncompliance, individually or in the aggregate, would not reasonably be expected to result in a Material Adverse Effect.

**(bbb)** Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect, the Company and its subsidiaries are, and during the past three years were, in compliance with all applicable state and federal data privacy and security laws and regulations, including without limitation the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act (collectively, “**HIPAA**”), and the Company and its subsidiaries have taken commercially reasonable actions to prepare to comply with, and since May 25, 2018, have been and currently are in compliance in all material respects with, the European Union General Data Protection Regulation (“**GDPR**”) (EU 2016/679) (collectively, the “**Privacy Laws**”). To ensure compliance with the Privacy Laws, the Company and 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 (the “**Policies**”). Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect, the Company and its subsidiaries have at all times made all disclosures to users or customers required by applicable laws and regulatory rules or requirements, and none of such disclosures made or contained in any Policy have, to the knowledge of the Company, been inaccurate or in violation of any applicable laws and regulatory rules or requirements in any material respect. The Company further certifies that neither it nor any subsidiary: (i) has received written 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 imposes any obligation or liability under any Privacy Law, except, in each of clauses (i), (ii) and (iii), which would, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

**(ccc)** The preclinical tests and clinical trials, and other studies (collectively, “studies”) that are described in, or the results of which are referred to in, the Registration Statement, the Time of Sale Prospectus or the Prospectus were and, if still pending, are being conducted in all material respects in accordance with the protocols, procedures and controls designed and approved for such studies and with standard medical and scientific research procedures; each description of the results of such studies is accurate and complete in all material respects and fairly presents the data derived from such studies, and the Company and its subsidiaries have no knowledge of any other studies the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement, the Time of Sale Prospectus or the Prospectus; the Company and its subsidiaries have made all such filings and obtained all such approvals as may be required for the conduct of its business by the Food and Drug Administration of the U.S. Department of Health and Human Services or any committee thereof or from any other U.S. or foreign government or drug or medical device regulatory agency, or health care facility Institutional Review Board (collectively, the “**Regulatory Agencies**”), except for such failures which would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse

Effect; neither the Company nor any of its subsidiaries have received any notice of, or correspondence from, any Regulatory Agency requiring the termination, suspension or modification of any clinical trials that are described or referred to in the Registration Statement, the Time of Sale Prospectus or the Prospectus; and the Company and its subsidiaries have each operated and currently are in compliance in all material respects with all applicable rules, regulations and policies of the Regulatory Agencies.

Any certificate signed by any officer of the Company or any of its subsidiaries and delivered to any Underwriter or to counsel for the Underwriters in connection with the offering, or the purchase and sale, of the Securities shall be deemed a representation and warranty by the Company to each Underwriter as to the matters covered thereby.

The Company has a reasonable basis for making each of the representations set forth in this Section 1. The Company acknowledges that the Underwriters and, for purposes of the opinions to be delivered pursuant to Section 6 hereof, counsel to the Company and counsel to the Underwriters, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

## **Section 2. Purchase, Sale and Delivery of the Securities.**

**(a) The Securities.** Upon the terms herein set forth, the Company agrees to issue and sell to the several Underwriters an aggregate of 12,323,077 Firm Shares and 1,676,923 Pre-Funded Warrants. On the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Underwriters agree, severally and not jointly, to purchase from the Company the respective number of Firm Shares and Pre-Funded Warrants set forth opposite their names on Schedule A. The purchase price per Firm Share to be paid by the several Underwriters to the Company shall be \$2.444 per share and a price per Pre-Funded Warrant of \$2.443.

**(b) The First Closing Date.** Delivery of certificates for the Firm Shares and Pre-Funded Warrants to be purchased by the Underwriters and payment therefor shall be made at the offices of Wilmer Cutler Pickering Hale and Dorr LLP (or such other place as may be agreed to by the Company and the Representative) at 9:00 a.m. New York City time, on January 12, 2021, or such other time and date not later than 1:30 p.m. New York City time, on January 27, 2021 as the Representative shall designate by notice to the Company (the time and date of such closing are called the “**First Closing Date**”). The Company hereby acknowledges that circumstances under which the Representative may provide notice to postpone the First Closing Date as originally scheduled include, but are not limited to, any determination by the Company or the Representative to recirculate to the public copies of an amended or supplemented Prospectus or a delay as contemplated by the provisions of Section 11.

**(c) The Optional Shares; Option Closing Date.** In addition, on the basis of the representations, warranties and agreements herein contained, and upon the terms but subject to the conditions herein set forth, the Company hereby grants an option to the several Underwriters to purchase, severally and not jointly, up to an aggregate of 2,100,000 Optional Shares from the Company at the purchase price per share to be paid by the Underwriters for the Firm Shares, less an amount per share equal to any dividend or distribution declared by the Company and payable on the Firm Shares but not payable on Optional Shares. The option granted hereunder may be exercised at any time and from time to time in whole or in part upon notice by the Representative to the Company, which notice may be given at any time within 30 days from the date of this Agreement. Such notice shall set forth (i) the aggregate number of Optional Shares as to which the Underwriters are exercising the option and (ii) the time, date and place at which certificates for the Optional Shares will be delivered (which time and date may be simultaneous with, but not earlier than, the First Closing Date; and in the event that such time and date are simultaneous

with the First Closing Date, the term “**First Closing Date**” shall refer to the time and date of delivery of certificates for the Firm Shares and such Optional Shares). Any such time and date of delivery, if subsequent to the First Closing Date, is called an “**Option Closing Date**,” and shall be determined by the Representative and shall not be earlier than two or later than five full business days after delivery of such notice of exercise. If any Optional Shares are to be purchased, each Underwriter agrees, severally and not jointly, to purchase the number of Optional Shares (subject to such adjustments to eliminate fractional shares as the Representative may determine) that bears the same proportion to the total number of Optional Shares to be purchased as the number of Firm Shares set forth on Schedule A opposite the name of such Underwriter bears to the total number of Firm Shares. The Representative may cancel the option at any time prior to its expiration by giving written notice of such cancellation to the Company.

(d) **Public Offering of the Securities.** The Representative hereby advises the Company that the Underwriters intend to offer for sale to the public, initially on the terms set forth in the Registration Statement, the Time of Sale Prospectus and the Prospectus, their respective portions of the Securities as soon after this Agreement has been executed as the Representative, in its sole judgment, has determined is advisable and practicable.

(e) **Payment for the Securities.** (i) Payment for the Securities shall be made at the First Closing Date (and, if applicable, at each Option Closing Date) by wire transfer of immediately available funds to the order of the Company.

(ii) It is understood that the Representative has been authorized, for its own account and the accounts of the several Underwriters, to accept delivery of and receipt for, and make payment of the purchase price for, the Firm Shares and Pre-Funded Warrants and any Optional Shares the Underwriters have agreed to purchase. Jefferies, individually and not as the Representative of the Underwriters, may (but shall not be obligated to) make payment for any Securities to be purchased by any Underwriter whose funds shall not have been received by the Representative by the First Closing Date or the applicable Option Closing Date, as the case may be, for the account of such Underwriter, but any such payment shall not relieve such Underwriter from any of its obligations under this Agreement.

(f) **Delivery of the Securities.** The Company shall deliver, or cause to be delivered through the book entry facilities of the Depository Trust Company (“**DTC**”) to the Representative for the accounts of the several Underwriters the Firm Shares and Pre-Funded Warrants at the First Closing Date, against release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The Company shall also deliver, or cause to be delivered, through the book entry facilities of DTC, to the Representative for the accounts of the several Underwriters, the Optional Shares the Underwriters have agreed to purchase at the First Closing Date or the applicable Option Closing Date, as the case may be, against the release of a wire transfer of immediately available funds for the amount of the purchase price therefor. The Offered Shares and Pre-Funded Warrants shall be delivered to such accounts and in such denominations as the Representative shall have requested at least two full business days prior to the First Closing Date (or the applicable Option Closing Date, as the case may be) and shall be made available for inspection on the business day preceding the First Closing Date (or the applicable Option Closing Date, as the case may be) at a location in New York City as the Representative may designate. Time shall be of the essence, and delivery at the time and place specified in this Agreement is a further condition to the obligations of the Underwriters.

**Section 3. Additional Covenants.** The Company further covenants and agrees with each Underwriter as follows:

**(a) Delivery of Registration Statement, Time of Sale Prospectus and Prospectus.** The Company shall furnish to you in New York City, without charge, prior to 10:00 a.m. New York City time on the business day next succeeding the date of this Agreement and during the period when a prospectus relating to the Securities is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) in connection with sales of the Securities, as many copies of the Time of Sale Prospectus, the Prospectus and any supplements and amendments thereto or to the Registration Statement as you may reasonably request.

**(b) Representative's Review of Proposed Amendments and Supplements.** During the period when a prospectus relating to the Securities is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), the Company (i) will furnish to the Representative for review, a reasonable period of time prior to the proposed time of filing of any proposed amendment or supplement to the Registration Statement, a copy of each such amendment or supplement and (ii) will not amend or supplement the Registration Statement (including any amendment or supplement through incorporation of any report filed under the Exchange Act) without the Representative's prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed. Prior to amending or supplementing any preliminary prospectus, the Time of Sale Prospectus or the Prospectus (including any amendment or supplement through incorporation of any report filed under the Exchange Act), the Company shall furnish to the Representative for review, a reasonable amount of time prior to the time of filing or use of the proposed amendment or supplement, a copy of each such proposed amendment or supplement. The Company shall not file or use any such proposed amendment or supplement without the Representative's prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed. The Company shall file with the Commission within the applicable period specified in Rule 424(b) under the Securities Act any prospectus required to be filed pursuant to such Rule.

**(c) Free Writing Prospectuses.** The Company shall furnish to the Representative for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of each proposed free writing prospectus or any amendment or supplement thereto prepared by or on behalf of, used by, or referred to by the Company, and the Company shall not file, use or refer to any proposed free writing prospectus or any amendment or supplement thereto without the Representative's prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed. The Company shall furnish to each Underwriter, without charge, as many copies of any free writing prospectus prepared by or on behalf of, used by or referred to by the Company as such Underwriter may reasonably request. If at any time when a prospectus is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) in connection with sales of the Securities (but in any event if at any time through and including the First Closing Date) there occurred or occurs an event or development as a result of which any free writing prospectus prepared by or on behalf of, used by, or referred to by the Company conflicted or would conflict with the information contained in the Registration Statement or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such time, not misleading, the Company shall promptly amend or supplement such free writing prospectus to eliminate or correct such conflict so that the statements in such free writing prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such time, not misleading, as the case may be; *provided, however*, that prior to amending or

supplementing any such free writing prospectus, the Company shall furnish to the Representative for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of such proposed amended or supplemented free writing prospectus, and the Company shall not file, use or refer to any such amended or supplemented free writing prospectus without the Representative's prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed.

**(d) Filing of Underwriter Free Writing Prospectuses.** The Company shall 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) under the Securities Act a free writing prospectus prepared by or on behalf of such Underwriter that such Underwriter otherwise would not have been required to file thereunder.

**(e) Amendments and Supplements to Time of Sale Prospectus.** If the Time of Sale Prospectus 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 or condition exist as a result of which it is necessary to amend or supplement the Time of Sale Prospectus so that the Time of Sale Prospectus does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when delivered to a prospective purchaser, not misleading, or if any event shall occur or condition exist as a result of which the Time of Sale Prospectus conflicts with the information contained in the Registration Statement, or if, in the opinion of counsel for the Underwriters, it is necessary to amend or supplement the Time of Sale Prospectus to comply with applicable law, the Company shall (subject to Section 3(b) and Section 3(c) hereof) promptly prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, either amendments or supplements to the Time of Sale Prospectus so that the statements in the Time of Sale Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when delivered to a prospective purchaser, not misleading or so that the Time of Sale Prospectus, as amended or supplemented, will no longer conflict with the information contained in the Registration Statement, or so that the Time of Sale Prospectus, as amended or supplemented, will comply with applicable law.

**(f) Certain Notifications and Required Actions.** After the date of this Agreement and until such time as the Underwriters are no longer required to deliver a Prospectus to confirm sales of the Securities, the Company shall promptly advise the Representative in writing of: (i) the receipt of any comments of, or requests for additional or supplemental information from, the Commission; (ii) the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus or the Prospectus; (iii) the time and date that any post-effective amendment to the Registration Statement becomes effective; and (iv) the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto or any amendment or supplement to any preliminary prospectus, the Time of Sale Prospectus or the Prospectus or of any order preventing or suspending the use of any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Shares from any securities exchange upon which they are listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its best efforts to obtain the lifting of such order at the earliest possible moment. Additionally, the Company agrees that it shall comply with all applicable provisions of Rule 424(b), Rule 433 and Rule 430B under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under Rule 424(b) or Rule 433 were received in a timely manner by the Commission.

**(g) Amendments and Supplements to the Prospectus and Other Securities Act Matters.** If any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus so that the Prospectus does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) to a purchaser, not misleading, or if in the opinion of the Representative or counsel for the Underwriters it is otherwise necessary to amend or supplement the Prospectus to comply with applicable law, the Company agrees (subject to Section 3(b) and Section 3(c)) hereof to promptly prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, amendments or supplements to the Prospectus so that the statements in the Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule) to a purchaser, not misleading or so that the Prospectus, as amended or supplemented, will comply with applicable law. Neither the Representative's consent to, nor delivery of, any such amendment or supplement shall constitute a waiver of any of the Company's obligations under Section 3(b) or Section 3(c).

**(h) Blue Sky Compliance.** The Company shall cooperate with the Representative and counsel for the Underwriters to qualify or register the Securities for sale under (or obtain exemptions from the application of) the state securities or blue sky laws or Canadian provincial securities laws (or other foreign laws) of those jurisdictions designated by the Representative, shall comply with such laws and shall continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Securities. The Company shall not be required to qualify as a foreign corporation or to take any action that would subject it to general service of process in any such jurisdiction where it is not presently qualified or where it would be subject to taxation as a foreign corporation. The Company will advise the Representative promptly of the suspension of the qualification or registration of (or any such exemption relating to) the Securities for offering, sale or trading in any jurisdiction or any initiation or threat of any proceeding for any such purpose, and in the event of the issuance of any order suspending such qualification, registration or exemption, the Company shall use its best efforts to obtain the withdrawal thereof as soon as practicable.

**(i) Use of Proceeds.** The Company shall apply the net proceeds from the sale of the Securities sold by it in the manner described under the caption "Use of Proceeds" in the Registration Statement, the Time of Sale Prospectus and the Prospectus.

**(j) Transfer Agent.** The Company shall engage and maintain, at its expense, a registrar and transfer agent for the Shares.

**(k) Earnings Statement.** The Company will make generally available to its security holders and to the Representative as soon as practicable an earnings statement (which need not be audited) covering a period of at least twelve months beginning with the first fiscal quarter of the Company commencing after the date of this Agreement that will satisfy the provisions of Section 11(a) of the Securities Act and the rules and regulations of the Commission thereunder, provided, however, that the requirements of this Section 3(k) shall be satisfied to the extent that such information is available on EDGAR.

**(l) Continued Compliance with Securities Laws.** The Company will comply with the Securities Act and the Exchange Act so as to permit the completion of the distribution of the Securities as

contemplated by this Agreement, the Registration Statement, the Time of Sale Prospectus and the Prospectus. Without limiting the generality of the foregoing, the Company will, during the period when a prospectus relating to the Securities is required by the Securities Act to be delivered (whether physically or through compliance with Rule 172 under the Securities Act or any similar rule), file on a timely basis with the Commission and the Nasdaq all reports and documents required to be filed under the Exchange Act.

(m) **Listing.** The Company will use its best efforts to list, subject to notice of issuance, the Offered Shares and the Warrant Shares on the Nasdaq.

(n) **Company to Provide Copy of the Prospectus in Form That May be Downloaded from the Internet.** If requested by the Representative, the Company shall cause to be prepared and delivered, at its expense, within one business day from the effective date of this Agreement, to the Representative an “**electronic Prospectus**” to be used by the Underwriters in connection with the offering and sale of the Securities. As used herein, the term “**electronic Prospectus**” means a form of Prospectus, and any amendment or supplement thereto, that meets each of the following conditions: (i) it shall be encoded in an electronic format, satisfactory to the Representative, that may be transmitted electronically by the Representative and the other Underwriters to offerees and purchasers of the Securities; (ii) it shall disclose the same information as the paper Prospectus, except to the extent that graphic and image material cannot be disseminated electronically, in which case such graphic and image material shall be replaced in the electronic Prospectus with a fair and accurate narrative description or tabular representation of such material, as appropriate; and (iii) it shall be in or convertible into a paper format or an electronic format, satisfactory to the Representative, that will allow investors to store and have continuously ready access to the Prospectus at any future time, without charge to investors (other than any fee charged for subscription to the Internet as a whole and for on-line time). The Company hereby confirms that it has included or will include in the Prospectus filed pursuant to EDGAR or otherwise with the Commission and in the Registration Statement at the time it was declared effective an undertaking that, upon receipt of a request by an investor or his or her representative, the Company shall transmit or cause to be transmitted promptly, without charge, a paper copy of the Prospectus.

(o) **Agreement Not to Offer or Sell Additional Shares.** During the period commencing on and including the date hereof and continuing through and including the 90th day following the date of the Prospectus (such period, as extended as described below, being referred to herein as the “**Lock-up Period**”), the Company will not, without the prior written consent of the Representative (which consent may be withheld in its sole discretion), directly or indirectly: (i) sell, offer to sell, contract to sell or lend any Shares or Related Securities (as defined below); (ii) effect any short sale, or establish or increase any “put equivalent position” (as defined in Rule 16a-1(h) under the Exchange Act) or liquidate or decrease any “call equivalent position” (as defined in Rule 16a1(b) under the Exchange Act) of any Shares or Related Securities; (iii) pledge, hypothecate or grant any security interest in any Shares or Related Securities; (iv) in any other way transfer or dispose of any Shares or Related Securities; (v) enter into any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of any Shares or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise; (vi) announce the offering of any Shares or Related Securities; (vii) submit or file any registration statement under the Securities Act in respect of any Shares or Related Securities (other than as contemplated by this Agreement with respect to the Securities); (viii) effect a reverse stock split, recapitalization, share consolidation, reclassification or similar transaction affecting the outstanding Shares; or (ix) publicly announce the intention to do any of the foregoing; *provided, however*, that the Company may (A) effect the transactions contemplated hereby; (B) issue debt securities convertible into Shares and/or warrants to purchase Shares in an offering in which Jefferies serves as the exclusive underwriter, placement agent or equivalent role; (C) issue Shares issuable upon conversion of

any debt securities issued in such offering or exercise of any warrants issued in such offering; (D) issue and sell Shares pursuant in an “at-the-market” offering in which Jefferies serves as the exclusive sales agent; (E) issue Shares upon conversion of shares of the Company’s Series B Non-Voting Convertible Preferred Stock; (F) file a registration statement on Form S-8 with respect to any securities issued or issuable pursuant to any stock option, stock bonus or other stock plan or arrangement described in the Registration Statement, the Time of Sale Prospectus and the Prospectus; or (G) issue Shares or Related Securities or options to purchase Shares, or issue Shares upon exercise of options or warrants, pursuant to any stock option, warrants, stock bonus or other stock plan or arrangement described in the Registration Statement, the Time of Sale Prospectus and the Prospectus, but only if the holders of such Shares, options or warrants agree in writing with the Underwriters not to sell, offer, dispose of or otherwise transfer any such Shares, options or warrants during such Lock-up Period without the prior written consent of the Representative (which consent may be withheld in its sole discretion). For purposes of the foregoing, “**Related Securities**” shall mean any options or warrants or other rights to acquire Shares or any securities exchangeable or exercisable for or convertible into Shares, or to acquire other securities or rights ultimately exchangeable or exercisable for, or convertible into, Shares.

**(p) Future Reports to the Representative.** During the period of five years hereafter, the Company will furnish to the Representative, c/o Jefferies, at 520 Madison Avenue, New York, New York 10022, Attention: Global Head of Syndicate: (i) as soon as practicable after the end of each fiscal year, copies of the Company’s Annual Report on Form 10-K for the year ended December 31, 2019 (the “**Annual Report**”) containing the balance sheet of the Company as of the close of such fiscal year and statements of income, stockholders’ equity and cash flows for the year then ended and the opinion thereon of the Company’s independent public or certified public accountants; (ii) as soon as practicable after the filing thereof, copies of each proxy statement, Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Report on Form 8-K or other report filed by the Company with the Commission, FINRA or any securities exchange; and (iii) as soon as available, copies of any report or communication of the Company furnished or made available generally to holders of its capital stock; *provided, however*, that the requirements of this Section 3(p) shall be satisfied to the extent that such reports, statement, communications, financial statements or other documents are available on EDGAR.

**(q) Warrant Shares Reserved.** The Company shall, at all times while any Pre-Funded Warrants are outstanding, reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Shares, solely for the purpose of enabling it to issue Warrant Shares upon exercise of such Pre-Funded Warrants, the number of Warrant Shares that are initially issuable and deliverable upon the exercise of the then-outstanding Pre-Funded Warrants.

**(r) Investment Limitation.** The Company shall not invest or otherwise use the proceeds received by the Company from its sale of the Securities in such a manner as would require the Company or any of its subsidiaries to register as an investment company under the Investment Company Act.

**(s) No Stabilization or Manipulation; Compliance with Regulation M.** The Company will not take, and will ensure that no affiliate of the Company will take, directly or indirectly, any action designed to or that might cause or result in stabilization or manipulation of the price of the Shares or any reference security with respect to the Shares, whether to facilitate the sale or resale of the Securities or otherwise, and the Company will, and shall cause each of its affiliates to, comply with all applicable provisions of Regulation M.

**(t) Enforce Lock-Up Agreements.** During the Lock-up Period, the Company will enforce all agreements between the Company and any of its securityholders that restrict or prohibit, expressly or in



operation, the offer, sale or transfer of Shares or Related Securities or any of the other actions restricted or prohibited under the terms of the form of Lock-up Agreement. In addition, the Company will direct the transfer agent to place stop transfer restrictions upon any such securities of the Company that are bound by such “lock-up” agreements for the duration of the periods contemplated in such agreements, including, without limitation, “lock-up” agreements entered into by the Company’s officers and directors and securityholders pursuant to Section 6(i) hereof.

**(u) Company to Provide Interim Financial Statements.** Prior to the First Closing Date and each applicable Option Closing Date, the Company will furnish the Underwriters, as soon as they have been prepared by or are available to the Company, a copy of any unaudited interim financial statements of the Company for any period subsequent to the period covered by the most recent financial statements appearing in the Registration Statement and the Prospectus.

The Representative, on behalf of the several Underwriters, may, in its sole discretion, waive in writing the performance by the Company of any one or more of the foregoing covenants or extend the time for their performance.

**Section 4. Payment of Expenses.** The Company agrees to pay all costs, fees and expenses incurred in connection with the performance of its obligations hereunder and in connection with the transactions contemplated hereby, including without limitation (i) all expenses incident to the issuance and delivery of the Securities (including all printing and engraving costs), (ii) all fees and expenses of the registrar and transfer agent of the Shares, (iii) all necessary issue, transfer and other stamp taxes in connection with the issuance and sale of the Securities to the Underwriters, (iv) all fees and expenses of the Company’s counsel, independent public or certified public accountants and other advisors, (v) all costs and expenses incurred in connection with the preparation, printing, filing, shipping and distribution of the Registration Statement (including financial statements, exhibits, schedules, consents and certificates of experts), the Time of Sale Prospectus, the Prospectus, each free writing prospectus prepared by or on behalf of, used by, or referred to by the Company, and each preliminary prospectus, and all amendments and supplements thereto, and this Agreement, (vi) the costs and expenses of the Company relating to investor presentations on any “road show”, 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 representatives, employees and officers of the Company and any such consultants, and the cost of any aircraft chartered in connection with the road show, (vii) the fees and expenses associated with listing the Offered Shares and Warrant Shares on the Nasdaq, (viii) all other fees, costs and expenses of the nature referred to in Item 13 of Part II of the Registration Statement and (ix) all reasonable out-of-pocket costs and expenses incident to the offering and the performance of the obligations of the Representative under this Agreement (including, without limitation, the reasonable fees and expenses of counsel to the Underwriters) not to exceed \$150,000 in the aggregate. Except as provided in this Section 4 or in Section 7, Section 9 or Section 10 hereof, the Underwriters shall pay their own expenses, including the fees and disbursements of their counsel.

**Section 5. Covenant of the Underwriters.** Each Underwriter severally and not jointly covenants with the Company not to take any action that would result in the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of such Underwriter that otherwise would not, but for such actions, be required to be filed by the Company under Rule 433(d).

**Section 6. Conditions of the Obligations of the Underwriters.** The respective obligations of the several Underwriters hereunder to purchase and pay for the Securities as provided herein on the First Closing Date and, with respect to the Optional Shares, each Option Closing Date, shall be subject to the accuracy of the representations and warranties on the part of the Company set forth in Section 1 hereof as of the date hereof and as of the First Closing Date as though then made and, with respect to the Optional Shares, as of each Option Closing Date as though then made, to the timely performance by the Company of its covenants and other obligations hereunder, and to each of the following additional conditions:

(a) **Comfort Letter.** On the date hereof, the Representative shall have received from Ernst & Young, LLP, independent registered public accountants for the Company, a letter dated the date hereof addressed to the Underwriters, in form and substance satisfactory to the Representative, containing statements and information of the type ordinarily included in accountant's "comfort letters" to underwriters, delivered according to Statement of Auditing Standards No. 72 (or any successor bulletin), with respect to the audited and unaudited financial statements and certain financial information contained in the Registration Statement, the Time of Sale Prospectus, and each free writing prospectus, if any.

(b) **Compliance with Registration Requirements; No Stop Order; No Objection from FINRA.** For the period from and after the date of this Agreement and through and including the First Closing Date and, with respect to any Optional Shares purchased after the First Closing Date, each Option Closing Date:

(i) The Company shall have filed the Prospectus with the Commission (including the information previously omitted from the Registration Statement pursuant to Rule 430B under the Securities Act) in the manner and within the time period required by Rule 424(b) under the Securities Act; or the Company shall have filed a posteffective amendment to the Registration Statement containing the information previously omitted from the Registration Statement pursuant to such Rule 430B, and such post-effective amendment shall have become effective.

(ii) No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment to the Registration Statement shall be in effect, and no proceedings for such purpose shall have been instituted or threatened by the Commission.

(iii) If a filing has been made with FINRA, FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(c) **No Material Adverse Effect or Ratings Agency Change.** For the period from and after the date of this Agreement and through and including the First Closing Date and, with respect to any Optional Shares purchased after the First Closing Date, each Option Closing Date:

(i) in the judgment of the Representative there shall not have occurred any Material Adverse Effect; and

(ii) there shall not have occurred any downgrading, nor shall any notice have been given of any intended or potential downgrading or of any review for a possible change that does not indicate the direction of the possible change, in the rating accorded any securities of the Company or any of its subsidiaries by any "nationally recognized statistical rating organization" as that term is used in Rule 15c3-1(c)(2)(vi)(F) under the Exchange Act.

(d) **Opinion of Counsel for the Company.** On each of the First Closing Date and each Option Closing Date the Representative shall have received the opinion and negative assurance letter of Troutman Pepper Hamilton Sanders LLP, counsel for the Company, dated as of such date, in the form attached hereto as Exhibit A and to such further effect as the Representative shall reasonably request.

(e) **Opinion of Intellectual Property Counsel.** On each of the First Closing Date and each Option Closing Date, the Representative shall have received the opinion of McNeill Baur PLLC, counsel for the Company with respect to intellectual property matters, dated as of such date, in the form attached hereto as Exhibit B and to such further effect as the Representative shall reasonably request.

(f) **Opinion of Counsel for the Underwriters.** On each of the First Closing Date and each Option Closing Date the Representative shall have received the opinion and negative assurance letter of Wilmer Cutler Pickering Hale and Dorr LLP, counsel for the Underwriters in connection with the offer and sale of the Securities, in form and substance satisfactory to the Underwriters, dated as of such date.

(g) **Officers' Certificate.** On each of the First Closing Date and each Option Closing Date, the Representative shall have received a certificate executed by the Chief Executive Officer or President of the Company and the Chief Financial Officer of the Company, dated as of such date, to the effect set forth in Section 6(b)(ii) and further to the effect that:

(i) for the period from and including the date of this Agreement through and including such date, there has not occurred any Material Adverse Effect;

(ii) the representations, warranties and covenants of the Company set forth in Section 1 of this Agreement are true and correct with the same force and effect as though expressly made on and as of such date; and

(iii) the Company has complied with all the agreements hereunder and satisfied all the conditions on its part to be performed or satisfied hereunder at or prior to such date.

(h) **Bring-down Comfort Letter.** On each of the First Closing Date and each Option Closing Date the Representative shall have received from Ernst & Young LLP, independent registered public accountants for the Company, a letter dated such date, in form and substance satisfactory to the Representative, which letter shall: (i) reaffirm the statements made in the letter furnished by them pursuant to Section 6(a), except that the specified date referred to therein for the carrying out of procedures shall be no more than three business days prior to the First Closing Date or the applicable Option Closing Date, as the case may be; and (ii) cover certain financial information contained in the Prospectus.

(i) **Lock-Up Agreements.** On or prior to the date hereof, the Company shall have furnished to the Representative an agreement in the form of Exhibit C hereto from each of the persons listed on Exhibit D hereto, and each such agreement shall be in full force and effect on each of the First Closing Date and each Option Closing Date.

(j) **Rule 462(b) Registration Statement.** In the event that a Rule 462(b) Registration Statement is filed in connection with the offering contemplated by this Agreement, such Rule 462(b) Registration Statement shall have been filed with the Commission on the date of this Agreement and shall have become effective automatically upon such filing.

(k) **Additional Documents.** On or before each of the First Closing Date and each Option Closing Date, the Representative and counsel for the Underwriters shall have received such information,

documents and opinions as they may reasonably request for the purposes of enabling them to pass upon the issuance and sale of the Securities as contemplated herein, or in order to evidence the accuracy of any of the representations and warranties, or the satisfaction of any of the conditions or agreements, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Securities as contemplated herein and in connection with the other transactions contemplated by this Agreement shall be satisfactory in form and substance to the Representative and counsel for the Underwriters.

If any condition specified in this Section 6 is not satisfied when and as required to be satisfied, this Agreement may be terminated by the Representative by notice from the Representative to the Company at any time on or prior to the First Closing Date and, with respect to the Optional Shares, at any time on or prior to the applicable Option Closing Date, which termination shall be without liability on the part of any party to any other party, except that Section 4, Section 7, Section 9 and Section 10 shall at all times be effective and shall survive such termination.

**Section 7. Reimbursement of Underwriters' Expenses.** If this Agreement is terminated by the Representative pursuant to Section 6 or Section 12, or if the sale to the Underwriters of the Securities on the First Closing Date is not consummated because of any refusal, inability or failure on the part of the Company to perform any agreement herein or to comply with any provision hereof, the Company agrees to reimburse the Representative and the other Underwriters (or such Underwriters as have terminated this Agreement with respect to themselves), severally, upon demand for all out-of-pocket expenses that shall have been reasonably incurred by the Representative and the Underwriters in connection with the proposed purchase and the offering and sale of the Securities, including, but not limited to, fees and disbursements of counsel, printing expenses, travel expenses, postage, facsimile and telephone charges; *provided, however*, that in the event any such termination is effected after the First Closing Date, but prior to any Option Closing Date with respect to the purchase of any Optional Shares, the Company shall only reimburse such Underwriters for all of their out-of-pocket expenses reasonably incurred after the First Closing Date in connection with the proposed purchase of any such Optional Shares.

**Section 8. Effectiveness of this Agreement.** This Agreement shall become effective upon the execution and delivery hereof by the parties hereto.

**Section 9. Indemnification.**

**(a) Indemnification of the Underwriters.** The Company agrees to indemnify and hold harmless each Underwriter, its affiliates, directors, officers, employees and agents, and each person, if any, who controls any Underwriter within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which such Underwriter or such affiliate, director, officer, employee, agent or controlling person may become subject, under the Securities Act, the Exchange Act, other federal or state statutory law or regulation, or the laws or regulations of foreign jurisdictions where Securities have been offered or sold or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Company), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, or the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) any untrue statement or alleged untrue statement of a material fact included in any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has used, referred

to or filed, or is required to file, pursuant to Rule 433(d) of the Securities Act or the Prospectus (or any amendment or supplement to the foregoing), or the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading; and to reimburse each Underwriter and each such affiliate, director, officer, employee, agent and controlling person for any and all reasonable expenses (including the reasonable fees and disbursements of counsel) as such expenses are incurred by such Underwriter or such affiliate, director, officer, employee, agent or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; *provided, however*, that the foregoing indemnity agreement shall not apply to any loss, claim, damage, liability or expense to the extent, but only to the extent, arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company by the Representative in writing expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any such free writing prospectus or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information consists of the information described in Section 9(b) below. The indemnity agreement set forth in this Section 9(a) shall be in addition to any liabilities that the Company may otherwise have.

**(b) *Indemnification of the Company, its Directors and Officers.*** Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, each of its directors, each of its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act, against any loss, claim, damage, liability or expense, as incurred, to which the Company, or any such director, officer or controlling person may become subject, under the Securities Act, the Exchange Act, or other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, or any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading or (ii) any untrue statement or alleged untrue statement of a material fact included in any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433 of the Securities Act, or the Prospectus (or any such amendment or supplement) or the omission or alleged omission to state therein a material fact necessary in order to make the statements, in the light of the circumstances under which they were made, not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, such preliminary prospectus, the Time of Sale Prospectus, such free writing prospectus or the Prospectus (or any such amendment or supplement), in reliance upon and in conformity with information relating to such Underwriter furnished to the Company by the Representative in writing expressly for use therein; and to reimburse the Company, or any such director, officer or controlling person for any and all reasonable expenses (including the reasonable fees and disbursements of counsel) as such expenses are incurred by the Company, or any such director, officer or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The Company hereby acknowledges that the only information that the Representative has furnished to the Company expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) of the Securities Act or the Prospectus (or any amendment or supplement to the foregoing) is the Underwriting Information. The indemnity

agreement set forth in this Section 9(b) shall be in addition to any liabilities that each Underwriter may otherwise have.

**(c) Notifications and Other Indemnification Procedures.** Promptly after receipt by an indemnified party under this Section 9 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party under this Section 9, notify the indemnifying party in writing of the commencement thereof, but the omission to so notify the indemnifying party will not relieve the indemnifying party from any liability which it may have to any indemnified party to the extent the indemnifying party is not materially prejudiced as a proximate result of such failure and shall not in any event relieve the indemnifying party from any liability that it may have otherwise than on account of this indemnity agreement. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it shall elect, jointly with all other indemnifying parties similarly notified, by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party; *provided, however*, that if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the indemnifying party to such indemnified party of such indemnifying party's election to so assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 9 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the fees and expenses of more than one separate counsel (together with local counsel), representing the indemnified parties who are parties to such action), which counsel (together with any local counsel) for the indemnified parties shall be selected by the Representative (in the case of counsel for the indemnified parties referred to in Section 9(a) above) or by the Company (in the case of counsel for the indemnified parties referred to in Section 9(b) above) or (ii) the indemnifying party shall not have employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action or (iii) the indemnifying party has authorized in writing the employment of counsel for the indemnified party at the expense of the indemnifying party, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party and shall be paid as they are incurred.

**(d) Settlements.** The indemnifying party under this Section 9 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by Section 9(c) hereof, the indemnifying party shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying

party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding and does not include an admission of fault or culpability or a failure to act by or on behalf of such indemnified party.

**Section 10. Contribution.** If the indemnification provided for in Section 9 is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount paid or payable by such indemnified party, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriters, on the other hand, from the offering of the Securities pursuant to this Agreement or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Underwriters, on the other hand, in connection with the statements or omissions which resulted in such losses, claims, damages, liabilities or expenses, 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 hand, in connection with the offering of the Securities pursuant to this Agreement shall be deemed to be in the same respective proportions as the total proceeds from the offering of the Securities pursuant to this Agreement (before deducting expenses) received by the Company, and the total underwriting discounts and commissions received by the Underwriters, in each case as set forth on the front cover page of the Prospectus, bear to the aggregate initial public offering price of the Securities as set forth on such cover. The relative fault of the Company, on the one hand, and the Underwriters, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or 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 hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and reasonable expenses referred to above shall be deemed to include, subject to the limitations set forth in Section 9(c), any legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 9(c) with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this Section 10; *provided, however*, that no additional notice shall be required with respect to any action for which notice has been given under Section 9(c) for purposes of indemnification.

The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 10 were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 10.

Notwithstanding the provisions of this Section 10, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions received by such Underwriter in connection with the Securities underwritten by it and distributed to the public. 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 pursuant to this Section 10 are several, and not joint, in proportion to their respective underwriting commitments as set forth opposite their respective names on Schedule A. For purposes of this Section 10, each affiliate, director, officer, employee and agent of an Underwriter and each person, if any, who controls an Underwriter within the meaning of the Securities Act or the Exchange Act shall have the same rights to contribution as such Underwriter, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of the Securities Act and the Exchange Act shall have the same rights to contribution as the Company.

**Section 11. Default of One or More of the Several Underwriters.** If, on the First Closing Date or any Option Closing Date any one or more of the several Underwriters shall fail or refuse to purchase Securities that it or they have agreed to purchase hereunder on such date, and the aggregate number of Securities which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase does not exceed 10% of the aggregate number of the Securities to be purchased on such date, the Representative may make arrangements satisfactory to the Company for the purchase of such Securities by other persons, including any of the Underwriters, but if no such arrangements are made by such date, the other Underwriters shall be obligated, severally and not jointly, in the proportions that the number of Firm Shares set forth opposite their respective names on Schedule A bears to the aggregate number of Firm Shares set forth opposite the names of all such non-defaulting Underwriters, or in such other proportions as may be specified by the Representative with the consent of the non-defaulting Underwriters, to purchase the Securities which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase on such date. If, on the First Closing Date or any Option Closing Date any one or more of the Underwriters shall fail or refuse to purchase Securities and the aggregate number of Securities with respect to which such default occurs exceeds 10% of the aggregate number of Securities to be purchased on such date, and arrangements satisfactory to the Representative and the Company for the purchase of such Securities are not made within 48 hours after such default, this Agreement shall terminate without liability of any party to any other party except that the provisions of Section 4, Section 7, Section 9 and Section 10 shall at all times be effective and shall survive such termination. In any such case either the Representative or the Company shall have the right to postpone the First Closing Date or the applicable Option Closing Date, as the case may be, but in no event for longer than seven days in order that the required changes, if any, to the Registration Statement and the Prospectus or any other documents or arrangements may be effected.

As used in this Agreement, the term "**Underwriter**" shall be deemed to include any person substituted for a defaulting Underwriter under this Section 11. Any action taken under this Section 11 shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

**Section 12. Termination of this Agreement.** Prior to the purchase of the Firm Shares by the Underwriters on the First Closing Date, this Agreement may be terminated by the Representative by notice given to the Company if at any time: (i) trading or quotation in any of the Company's securities shall have been suspended or limited by the Commission or by the Nasdaq, or trading in securities generally on either the Nasdaq or the NYSE shall have been suspended or limited, or minimum or maximum prices shall have been generally established on any of such stock exchanges; (ii) a general banking moratorium shall have been declared by any state or federal authority; (iii) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States' or international political, financial or economic conditions, as in the judgment of the Representative is material and adverse and



makes it impracticable to market the Securities in the manner and on the terms described in the Time of Sale Prospectus or the Prospectus or to enforce contracts for the sale of securities; (iv) in the judgment of the Representative there shall have occurred any Material Adverse Effect; or (v) the Company shall have sustained a loss by strike, fire, flood, earthquake, accident or other calamity of such character as in the reasonable judgment of the Representative may interfere materially with the conduct of the business and operations of the Company regardless of whether or not such loss shall have been insured. Any termination pursuant to this Section 12 shall be without liability on the part of (a) the Company to any Underwriter, except that the Company shall be obligated to reimburse the expenses of the Representative and the Underwriters pursuant to Section 4 or Section 7 hereof or (b) any Underwriter to the Company ; *provided, however*, that the provisions of Section 9 and Section 10 shall at all times be effective and shall survive such termination.

**Section 13. No Advisory or Fiduciary Relationship.** The Company acknowledges and agrees that (a) the purchase and sale of the Securities pursuant to this Agreement, including the determination of the public offering price of the Securities and any related discounts and commissions, is an arm's-length commercial transaction between the Company, on the one hand, and the several Underwriters, on the other hand, (b) in connection with the offering contemplated hereby and the process leading to such transaction, each Underwriter is and has been acting solely as a principal and is not the agent or fiduciary of the Company, or its stockholders, creditors, employees or any other party, (c) no Underwriter has assumed or will assume an advisory or fiduciary responsibility in favor of the Company with respect to the offering contemplated hereby or the process leading thereto (irrespective of whether such Underwriter has advised or is currently advising the Company on other matters) and no Underwriter has any obligation to the Company with respect to the offering contemplated hereby except the obligations expressly set forth in this Agreement, (d) the Underwriters and their respective affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company, and (e) the Underwriters have not provided any legal, accounting, regulatory or tax advice with respect to the offering contemplated hereby and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent it deemed appropriate.

**Section 14. Representations and Indemnities to Survive Delivery.** The respective indemnities, agreements, representations, warranties and other statements of the Company, of its officers and of the several Underwriters set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter or the Company or any of its or their partners, officers or directors or any controlling person, as the case may be, and, anything herein to the contrary notwithstanding, will survive delivery of and payment for the Securities sold hereunder and any termination of this Agreement.

**Section 15. Notices.** All communications hereunder shall be in writing and shall be mailed, hand delivered or telecopied and confirmed to the parties hereto as follows:

If to the Representative:

Jefferies LLC  
520 Madison Avenue  
New York, New York 10022  
Facsimile: (646) 619-4437  
Attention: General Counsel

with a copy to:

Wilmer Cutler Pickering Hale and Dorr LLP  
7 World Trade Center  
250 Greenwich Street  
New York, New York 10007  
Facsimile: (212) 230-8888  
Attention: Lisa Firenze, Esq.

If to the Company:

Cerecor Inc.  
540 Gaither Road, Suite 400  
Rockville, Maryland 20850  
Email: csullivan@cerecor.com  
Attention: Chris Sullivan, Chief Financial Officer, Interim

with a copy to:

Troutman Pepper Hamilton Sanders LLP  
3000 Two Logan Square  
Philadelphia, Pennsylvania 19103  
Facsimile: 877-767-8438  
Attention: Brian Katz, Esq.

Any party hereto may change the address for receipt of communications by giving written notice to the others.

**Section 16. Successors.** This Agreement will inure to the benefit of and be binding upon the parties hereto, including any substitute Underwriters pursuant to Section 11 hereof, and to the benefit of the affiliates, directors, officers, employees, agents and controlling persons referred to in Section 9 and Section 10, and in each case their respective successors, and no other person will have any right or obligation hereunder. The term “**successors**” shall not include any purchaser of the Securities as such from any of the Underwriters merely by reason of such purchase.

**Section 17. Partial Unenforceability.** The invalidity or unenforceability of any section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other section, paragraph or provision hereof. If any section, paragraph 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.

**Section 18. 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 Agreement, (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); (B) “**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); (C) “**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; and (D) “**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.

**Section 19. Governing Law Provisions.** This Agreement shall be governed by and construed in accordance with the internal laws of the State of New York applicable to agreements made and to be performed in such state. Any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby (“**Related Proceedings**”) may be instituted in the federal courts of the United States of America located in the Borough of Manhattan in the City of New York or the courts of the State of New York in each case located in the Borough of Manhattan in the City of New York (collectively, the “**Specified Courts**”), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court (a “**Related Judgment**”), as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party’s address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum.

**Section 20. General Provisions.** 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. This Agreement may be executed in two or more counterparts, each one of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.

Each of the parties hereto acknowledges that it is a sophisticated business person who was adequately represented by counsel during negotiations regarding the provisions hereof, including, without limitation, the indemnification provisions of Section 9 and the contribution provisions of Section 10, and is fully informed regarding said provisions. Each of the parties hereto further acknowledges that the provisions of Section 9 and Section 10 hereof fairly allocate the risks in light of the ability of the parties to investigate the Company, its affairs and its business in order to assure that adequate disclosure has been

made in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, each free writing prospectus and the Prospectus (and any amendments and supplements to the foregoing), as contemplated by the Securities Act and the Exchange Act.

If the foregoing is in accordance with your understanding of our agreement, kindly sign and return to the Company the enclosed copies hereof, whereupon this instrument, along with all counterparts hereof, shall become a binding agreement in accordance with its terms.

Very truly yours,

**CERECOR INC.**

By: /s/ Michael Cola  
Name: Michael Cola  
Title: Chief Executive Officer

The foregoing Underwriting Agreement is hereby confirmed and accepted by the Representative in New York, New York as of the date first above written.

**JEFFERIES LLC**

Acting individually and as Representative  
of the several Underwriters named in  
the attached Schedule A.

By: /s/ Dustin Tyner

\_\_\_\_\_  
Name: Dustin Tyner

Title: Managing Director

Schedule A

<b>Underwriters</b>	<b>Number of Firm Shares</b>	<b>Number of Pre-Funded Warrants</b>
Jefferies LLC	9,858,461	1,341,539
Oppenheimer & Co. Inc.	2,464,616	335,384
Total	<u>12,323,077</u>	<u>1,676,923</u>

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**Free Writing Prospectuses Included in the Time of Sale Prospectus**

None.

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**Applicable Subsidiaries**

Ichorion Therapeutics, LLC  
Aevi Genomic Medicine, LLC  
TRx Pharmaceuticals, LLC  
Zylera Pharmaceuticals, LLC  
Zylera Pharma Corp.

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**Form of Opinion of Company Counsel**

**Form of Opinion of McNeill Baur PLLC**

**Form of Lock-up Agreement**

[Date]

Jefferies LLC

As Representative of the Several Underwriters  
c/o Jefferies LLC  
520 Madison Avenue  
New York, New York 10022

RE: Cerecor Inc. (the “**Company**”)

Ladies & Gentlemen:

The undersigned is an owner of shares of common stock, par value \$0.001 per share, of the Company (“**Shares**”) or of securities convertible into or exchangeable or exercisable for Shares. The Company proposes to conduct a public offering of Shares (the “**Offering**”) for which Jefferies LLC (“**Jefferies**”) will act as the representative of the underwriters. The undersigned recognizes that the Offering will benefit each of the Company and the undersigned. The undersigned acknowledges that the underwriters are relying on the representations and agreements of the undersigned contained in this letter agreement in conducting the Offering and, at a subsequent date, in entering into an underwriting agreement (the “**Underwriting Agreement**”) and other underwriting arrangements with the Company with respect to the Offering.

Annex A sets forth definitions for capitalized terms used in this letter agreement that are not defined in the body of this agreement. Those definitions are a part of this agreement.

In consideration of the foregoing, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned hereby agrees that, during the Lock-up Period, the undersigned will not (and will cause any Family Member not to), without the prior written consent of Jefferies, which may withhold its consent in its sole discretion:

- Sell or Offer to Sell any Shares or Related Securities currently or hereafter owned either of record or beneficially (as defined in Rule 13d-3 under the Exchange Act) by the undersigned or such Family Member,
- enter into any Swap,
- make any demand for, or exercise any right with respect to, the registration under the Securities Act of the offer and sale of any Shares or Related Securities, or cause to be filed a registration statement, prospectus or prospectus supplement (or an amendment or supplement thereto) with respect to any such registration, or
- publicly announce any intention to do any of the foregoing.

The foregoing will not apply to the registration of the offer and sale of the Shares, and the sale of the Shares to the underwriters, in each case as contemplated by the Underwriting Agreement. In addition, the foregoing restrictions shall not apply to:

- (i) the transfer of Shares or Related Securities by gift, including, without limitation, to a charitable or educational institution, or by will or intestate succession to a Family Member or to a trust whose beneficiaries consist exclusively of one or more of the undersigned and/or a Family Member;
- (ii) if the undersigned is a corporation, partnership, limited liability company, trust or other business entity, the transfer of Shares or Related Securities to (x) another corporation, partnership, limited liability company, trust or other business entity that is a direct or indirect affiliate (as defined in Rule 405 promulgated under the Securities Act) of the undersigned, or (y) limited partners, limited liability company members or stockholders of the undersigned (provided that any such transfer in this clause (ii) shall not involve a disposition for value);
- (iii) if the undersigned is a trust, to the beneficiary of such trust; or
- (iv) the transfer of Shares or Related Securities pursuant to the conversion or sale of, or an offer to purchase, all or substantially all of the outstanding Shares, whether pursuant to a merger, tender offer or otherwise; provided, that in the event that such transaction is not completed, the Shares or Related Securities owned by the undersigned shall remain subject to the restrictions herein.

Notwithstanding the foregoing, in any such case as provided in clauses (i) through (iv), it shall be a condition to such transfer that:

- each transferee executes and delivers to Jefferies an agreement in form and substance satisfactory to Jefferies stating that such transferee is receiving and holding such Shares and/or Related Securities subject to the provisions of this letter agreement and agrees not to Sell or Offer to Sell such Shares and/or Related Securities, engage in any Swap or engage in any other activities restricted under this letter agreement except in accordance with this letter agreement (as if such transferee had been an original signatory hereto), and
- prior to the expiration of the Lock-up Period, no public disclosure or filing under the Exchange Act by any party to the transfer (donor, donee, transferor or transferee) shall be required, or made voluntarily, reporting a reduction in beneficial ownership of Shares in connection with such transfer.

Furthermore, notwithstanding the restrictions imposed by this letter agreement, the undersigned may (i) transfer Shares to the Company as forfeitures to satisfy tax withholding obligations of the undersigned in connection with the vesting or exercise of equity awards outstanding as of the date of the preliminary prospectus supplement granted pursuant to the Company's equity incentive plans and arrangements, (ii) transfer Shares or Related Securities to the Company pursuant to agreements under which the Company has the option to repurchase such Shares or Related Securities or a right of first refusal with respect to transfers of such Shares or Related Securities, (iii) establish a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of Shares, provided that such plan does not provide for any transfers of Shares during the Lock-up Period and the entry into such plan is not publicly disclosed, including in any filing under the Exchange Act, during the Lock-up Period, or (iv) transfer Shares or Related Securities by operation of law or by an order of a court or regulatory agency, such as pursuant to a qualified domestic order or in connection with a divorce settlement provided that the transferee execute and deliver to the

Representative a letter agreement in substantially the form of this letter agreement. If the undersigned is required to make a filing under the Exchange Act reporting a reduction in beneficial ownership of Shares or Related Securities during the Lock-up Period pursuant to clauses (i) or (ii) of this paragraph, the undersigned shall include a statement in such filing describing the purpose of the transaction.

The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of Shares or Related Securities held by the undersigned and the undersigned's Family Members, if any, except in compliance with the foregoing restrictions.

With respect to the Offering only, the undersigned waives any registration rights relating to registration under the Securities Act of the offer and sale of any Shares and/or any Related Securities owned either of record or beneficially by the undersigned, including any rights to receive notice of the Offering.

The undersigned confirms that the undersigned has not, and has no knowledge that any Family Member has, directly or indirectly, taken any action designed to or that might reasonably be expected to cause or result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale of the Shares. The undersigned will not, and will cause any Family Member not to take, directly or indirectly, any such action.

Whether or not the Offering occurs as currently contemplated or at all depends on market conditions and other factors. The Offering will only be made pursuant to the Underwriting Agreement, the terms of which are subject to negotiation between the Company and the underwriters.

If (i) the Company provides five (5) business days prior written notice to the Representative that it does not intend to proceed with the Offering, (ii) the Underwriting Agreement is not executed before January 31, 2021, or (iii) the Underwriting Agreement (other than the provisions thereof that survive termination) terminates or is terminated prior to payment for and delivery of the Shares, then in each case, this letter agreement shall automatically, and without any action on the part of any other party, terminate and be of no further force and effect, and the undersigned shall automatically be released from the obligations under this letter agreement.

The undersigned hereby represents and warrants that the undersigned has full power, capacity and authority to enter into this letter agreement. This letter agreement is irrevocable and will be binding on the undersigned and the successors, heirs, personal representatives and assigns of the undersigned.

This letter agreement shall be governed by, and construed in accordance with, the laws of the State of New York.

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Signature

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Printed Name of Person Signing

*(Indicate capacity of person signing if signing as  
custodian or trustee, or on behalf of an entity)*

**Certain Defined Terms**  
**Used in Lock-up Agreement**

For purposes of the letter agreement to which this Annex A is attached and of which it is made a part:

- “**Call Equivalent Position**” shall have the meaning set forth in Rule 16a-1(b) under the Exchange Act.
- “**Exchange Act**” shall mean the Securities Exchange Act of 1934, as amended.
- “**Family Member**” shall mean the spouse of the undersigned, an immediate family member of the undersigned or an immediate family member of the undersigned's spouse, in each case living in the undersigned's household or whose principal residence is the undersigned's household (regardless of whether such spouse or family member may at the time be living elsewhere due to educational activities, health care treatment, military service, temporary internship or employment or otherwise). “**Immediate family member**” as used above shall have the meaning set forth in Rule 16a-1(e) under the Exchange Act.
- “**Lock-up Period**” shall mean the period beginning on the date hereof and continuing through the close of trading on the date that is 90 days after the date of the Prospectus (as defined in the Underwriting Agreement).
- “**Put Equivalent Position**” shall have the meaning set forth in Rule 16a-1(h) under the Exchange Act.
- “**Related Securities**” shall mean any options or warrants or other rights to acquire Shares or any securities exchangeable or exercisable for or convertible into Shares, or to acquire other securities or rights ultimately exchangeable or exercisable for or convertible into Shares.
- “**Securities Act**” shall mean the Securities Act of 1933, as amended.
- “**Sell or Offer to Sell**” shall mean to:
  - sell, offer to sell, contract to sell or lend,
  - effect any short sale or establish or increase a Put Equivalent Position or liquidate or decrease any Call Equivalent Position
  - pledge, hypothecate or grant any security interest in, or
  - in any other way transfer or dispose of,

in each case whether effected directly or indirectly.

- “**Swap**” shall mean any swap, hedge or similar arrangement or agreement that transfers, in whole or in part, the economic risk of ownership of Shares or Related Securities, regardless of whether any such transaction is to be settled in securities, in cash or otherwise.

Capitalized terms not defined in this Annex A shall have the meanings given to them in the body of this lock-up agreement.



**Directors, Executive Officers and Others**  
**Signing Lock-up Agreement**

Directors:

Dr. Sol J. Barer  
Michael F. Cola  
Steven J. Boyd  
Phil Gutry  
Dr. Gilla Kaplan  
Dr. Suzanne Bruhn  
Dr. Magnus Persson  
Joseph Miller

Executive Officers:

Michael F. Cola  
Dr. Garry Neil  
Chris Sullivan  
James Harrell

Others:

Armistice Capital

## CERECOR INC.

## FORM OF PRE-FUNDED WARRANT TO PURCHASE COMMON STOCK

Number of Shares: [ ]  
(subject to adjustment)

Warrant No. [ ]  
Original Issue Date: January [ ], 2021

Cerecor Inc., a Delaware corporation (the “Company”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Nantahala Capital Management LLC, 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, \$0.001 par value per share (the “Common Stock”), of the Company (each such share, a “Warrant Share” and all such shares, the “Warrant Shares”) at an exercise price per share equal to \$0.001 per share (as adjusted from time to time as provided in Section 9 herein, the “Exercise Price”), upon surrender of this *Warrant to Purchase Common Stock* (including any *Warrants to Purchase Common Stock* issued in exchange, transfer or replacement hereof, this “Warrant”) at any time and from time to time on or after the date hereof (the “Original Issue Date”), subject to the following terms and conditions:

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, 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 immediately 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 OTC Markets Group Inc. 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 of such security on such date. 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 Capital Market.

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(e) “*Registration Statement*” means the Company’s Registration Statement on Form S-3 (File No. 333-233978), as amended, declared effective on May 18, 2018.

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

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

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

2 . Issuance of Securities; Registration of Warrants. The Warrant and Warrant Shares, as initially issued by the Company, are offered and will be sold pursuant to the Registration Statement. The Company shall register ownership of 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 assignee to which this Warrant is 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) by the Holder or any subsequent holder. 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 this Warrant at any time and from time to time on or after the Original Issue Date.

(b) The Holder may exercise this Warrant by delivering (as determined in accordance with the notice provisions hereof) to the Company an exercise notice, in the form attached as Schedule 1 hereto (the “*Exercise Notice*”), completed and duly signed. Within one (1) Trading Day following the date of delivery of the Exercise Notice, the Holder shall make 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). The date on which the Notice of Exercise is delivered to the Company (as determined in accordance with the notice provisions hereof) is an “*Exercise Date*” provided, that if the Exercise Price is not delivered on or before one (1) Trading Day following the date of delivery of the Exercise Notice, the Exercise Date shall be deemed to be one (1) Trading Day following the date of that the Exercise Price is delivered to the Company. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. 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, if any. The aggregate exercise price of this Warrant, except for the Exercise Price, was pre-funded to the Company on or before the Original Issue Date, and consequently no additional consideration (other than the Exercise Price) shall be required by to be paid by the Holder to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-funded exercise price under any circumstance or for any reason whatsoever.

5. Delivery of Warrant Shares.

(a) Upon exercise of this Warrant, the Company shall promptly (but in no event later than two (2) Trading Days after the Exercise Date), upon the request of the Holder, credit or instruct the Transfer Agent to 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 At Custodian 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") 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 time of delivery of the Exercise Notice on 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. While this Warrant remains outstanding, the Company shall maintain a transfer agent that participates in the FAST Program.

(b) If by the close of the fifth (5th) 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 second (2nd) Trading Day and prior to the receipt of such Warrant Shares, the Holder purchases (in an open market transaction or otherwise that reflects prevailing market prices) 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 to unwind its commercially reasonable hedge position in a commercially reasonable manner (a "Buy-In"), then the Company shall, within two (2) Trading Days after the Holder's request, 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 commercially reasonable 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.

(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 the Warrants in a name other than that of the Holder or an Affiliate thereof. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving Warrant Shares upon exercise hereof.

7. Replacement of Warrant. If this Warrant is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for this Warrant, a New Warrant, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction (in such case) and, in each case, a customary and reasonable indemnity (but not the posting of any surety or other 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 non-assessable. 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. The Company further covenants that it will not, without the prior written consent of the Holder, take any actions to increase the par value of the Common Stock at any time while this Warrant is outstanding.

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

(a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock 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, as described in the Registration Statement, 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 Exercise Price shall be multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately before such event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, provided, however, that if such record date shall have been fixed and such dividend is not fully paid on the date fixed therefor, the Exercise Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Exercise Price 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) or (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. The Company covenants that it will, at all times while this Warrant is outstanding, reserve and keep available all Distributed Property that the Holder shall be entitled to receive hereunder, solely for the purpose of fulfilling its obligations pursuant to this Section 9(b).

(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 and in which 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) for more than 90% of the outstanding capital stock of the Company, holders of capital stock 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, but not including any underwritten offering, registered direct offering, private placement or other transaction with the primary purpose of financing or fund raising for the Company) 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 only 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, in which case the Warrant will be deemed automatically exercised in full in exchange for such cash consideration pursuant to the “cashless exercise” provisions in Section 10 below upon the consummation of the Fundamental Transaction 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) Number of Warrant Shares. Simultaneously with any adjustment to the Exercise Price pursuant to Section 9 (including any adjustment to the Exercise Price that would have been effected but for the final sentence in this paragraph (d)), the number of Warrant Shares that may be purchased upon exercise of this Warrant shall be increased or decreased proportionately, so that after such adjustment the aggregate Exercise Price payable hereunder for the increased or decreased number of Warrant Shares shall be the same as the aggregate Exercise Price in effect immediately prior to such adjustment. Notwithstanding the foregoing, in no event may the Exercise Price be adjusted below the par value of the Common Stock then in effect.

(e) Calculations. All calculations under this Section 9 shall be made to the nearest one-tenth of one cent or the nearest share, as applicable.

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

(g) Notice of Corporate Events. If, while this Warrant is outstanding, the Company (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including, without

limitation, any granting of rights or warrants to subscribe for or purchase any capital stock of the Company 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 the event such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall (on the same time frame set forth in the immediately prior sentence) offer the Holder the ability to sign a confidentiality agreement related thereto sufficient to allow the Holder to receive such notice, and the Company shall deliver such notice immediately upon execution of such confidentiality agreement. 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(g) in confidence until such information is publicly available, and shall comply with applicable law with respect to trading in the Company's securities following receipt any such information.

10. Payment of Exercise Price. 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" (with respect to which the Company will preserve the availability of the exemption from registration in Section 3(a)(9) of the Securities Act), 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 (i) the last Closing Sale Price of the shares of Common Stock (as reported by Bloomberg Financial Markets) on the Trading Day immediately preceding the Exercise Date if the Exercise Notice is delivered prior to market close on the Exercise Date, or (ii) the last Closing Sale Price of the shares of Common Stock (as reported by Bloomberg Financial Markets) on the Exercise Date if the Exercise Notice is delivered following market close on 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, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, 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). In the event that the Registration Statement or another registration statement registering the issuance of Warrant Shares is, for any reason, not effective at the time of exercise of this Warrant, then the Warrant may only be exercised through a cashless exercise, as set forth in this Section 10. Except as set forth in Section 5(b) (Buy-In remedy) and Section 12 (payment of cash in lieu of fractional shares), in no event will the exercise of this Warrant be settled in cash. For the avoidance of doubt, in the event that the Registration Statement or another registration statement registering the issuance of the Warrant Shares is, for any reason, not effective at the time of exercise of this Warrant, then a cashless exercise pursuant to this Section 10 in exchange for unregistered Warrant Shares in accordance with Section 3(a)(9) of the Securities Act shall also be permitted.

11. Limitations on Exercise.

(a) Notwithstanding anything to the contrary contained herein, the Company shall not effect any exercise of this Warrant, and the Holder shall not be entitled to exercise this Warrant for a number of Warrant Shares in excess of that number of Warrant Shares which, upon giving effect to such exercise, would cause (i) the aggregate number of shares of Common Stock beneficially owned by the Holder, the Holder together with such Holder's Affiliates, any person having beneficial ownership of shares of Common Stock owned by the Holder as calculated in accordance with Section 13(d) of the Exchange Act, or any persons acting as a Section 13(d) group together with such Holder or any of such Holder's Affiliates (any such person other than Holder, including any group of which Holder is a member, an "Additional Restricted Ownership Person") (, to exceed 9.99% (the "Maximum Percentage") of the total number of issued and outstanding shares of Common Stock of the Company following such exercise, or (ii) the combined voting power of the securities of the Company beneficially owned by the Holder or any Additional Restricted Ownership Person to exceed 9.99% of the combined voting power of all of the securities of the Company then outstanding following such exercise. For purposes of this Warrant, in determining the number of outstanding shares of Common Stock, the Holder and any Additional Restricted Ownership Person 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, filed with the Commission prior to the date hereof, (y) a more recent public announcement by the Company or (z) any other notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written request of the Holder, the Company shall within three (3) Trading Days confirm in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder since the date as of which such number of outstanding shares of Common Stock was reported. By written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 19.99% specified in such notice; provided that any such increase will not be effective until the sixty-first (61st) day after such notice is delivered to the Company. For purposes of this Section 11(a), the aggregate number of shares of Common Stock or voting securities beneficially owned by the Holder or any Additional Restricted Ownership Person shall include the shares of Common Stock issuable upon the exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (x) exercise of the remaining unexercised and non-cancelled portion of this Warrant by the Holder or any Additional Restricted Ownership Person and (y) exercise or conversion of the unexercised, non-converted or non-cancelled portion of any other securities of the Company that do not have voting power (including without limitation any securities of the Company which would entitle the holder thereof to acquire at any time Common Stock, including without limitation any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock), is subject to a limitation on conversion or exercise analogous to the limitation contained herein and is beneficially owned by the Holder or any Additional Restricted Ownership Person, 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. The limitations contained in this Section 11(a) shall terminate immediately at any time at which the Common Stock underlying the Warrants cease to be an "equity security" as defined in Rule 13d-1(i) promulgated under the Exchange Act (or any successor rule).

(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(c) 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 (i) the time of



transmission, if such notice or communication is delivered via facsimile or confirmed e-mail at the facsimile number or e-mail address specified in the books and records of the Transfer Agent prior to 5:30 P.M., New York City time, on a Trading Day so long as the sender of an e-mail has not received an automated notice of delivery failure from the proposed recipient's computer server, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile or confirmed e-mail at the facsimile number or e-mail address specified in the books and records of the Transfer Agent on a day that is not a Trading Day or later than 5:30 P.M., New York City time, on any Trading Day so long as the sender of an e-mail has not received an automated notice of delivery failure from the proposed recipient's computer server, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service specifying next business day delivery, or (iv) upon actual receipt by the Person to whom such notice is required to be given, if by hand delivery. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any subsidiaries, the Company shall comply with its disclosure obligations under Regulation FD by simultaneously filing or publishing such notice on a Current Report on Form 8-K, a press release, or otherwise, or ensuring that the Holder is bound by a confidentiality obligation to which the Holder has agreed; provided, however, that nothing in this section shall obligate or require the Holder to agree to a confidentiality obligation.

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. Notwithstanding anything to the contrary contained herein or in any warrant agency agreement that the Company may enter into in the future, the Holder shall be entitled to elect to receive, or continue to hold, this Warrant in certificated form, in which case the terms set forth in any such warrant agency agreement shall not apply to this Warrant.

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 non-assessable Warrant Shares upon the exercise of this Warrant, and (c) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable the Company to perform its obligations under this Warrant.

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

(c) Successors and Assigns. Subject to the restrictions on transfer set forth in this Warrant and 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.

(i) Interpretation. For purposes of this Warrant, (a) the words “include,” “includes” and “including” are deemed to be followed by the words “without limitation”; (b) the word “or” is not exclusive; and (c) the words

“herein,” “hereof,” “hereby,” “hereto” and “hereunder” refer to this Warrant as a whole. Unless the context otherwise requires, references herein: (x) to sections and schedules mean the sections of, and schedules attached to, this Warrant; (y) to an agreement, instrument, or other document means such agreement, instrument, or other document (as amended, supplemented and modified from time to time to the extent permitted by the provisions thereof/without regard to subsequent amendments, supplements, and modifications thereto); and (z) to a statute means such statute (as amended from time to time and includes/enforced at the time and date of this Warrant becoming effective) and does not include any successor legislation thereto and any regulations promulgated thereunder. This Warrant shall be construed without regard to any presumption or rule requiring construction or interpretation against the party drafting an instrument or causing any instrument to be drafted. The schedules referred to herein shall be construed with, and as an integral part of, this Warrant to the same extent as if they were set forth verbatim herein. All references to “\$” or “dollars” mean the lawful currency of the United States of America. Whenever the singular is used in this Warrant, the same shall include the plural, and whenever the plural is used herein, the same shall include the singular, where appropriate.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

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

**COMPANY:**

CERECOR, INC.

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

[Signature Page to Warrant]

SCHEDULE 1

FORM OF EXERCISE NOTICE

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

Ladies and Gentlemen:

(1) The undersigned is the Holder of Warrant No. \_\_\_ (the "*Warrant*") issued by Cerecor 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) 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)

Exhibit 5.1

January 8, 2021  
Cerecor Inc.  
540 Gaither Road, Suite 400  
Rockville, Maryland 20850

**Re: Underwritten Public Offering**

Ladies and Gentlemen:

Reference is made to the Registration Statement on Form S-3 (Registration No. 333-2033978), as amended (the "**Registration Statement**"), filed by Cerecor Inc., a Delaware corporation (the "**Company**") with the Securities and Exchange Commission (the "**Commission**") and declared effective on October 24, 2019, relating to the registration of the offer by the Company of up to \$100,000,000 of any combination of securities of the types specified therein which may be issued as set forth in the Registration Statement and the prospectus contained therein (the "**Base Prospectus**"). We are rendering this supplemental opinion in connection with the prospectus supplement, dated January 7, 2021 (the "**Prospectus Supplement**" and together with the Base Prospectus, the "**Prospectus**"), relating to the offering by the Company of (i) 14,423,077 shares of the Company's common stock, \$0.001 par value ("**Common Stock**"), which includes up to an additional 2,100,000 shares that the underwriters may purchase in connection with the exercise of their option to purchase additional shares (such shares of Common Stock, the "**Shares**"), (ii) 1,676,923 pre-funded warrants to purchase shares of Common Stock (the "**Pre-funded Warrants**") and (iii) 1,676,923 shares of Common Stock issuable from time to time upon exercise of the Pre-funded Warrants (the "**Warrant Shares**", and together with the Pre-funded Warrants and the Shares, the "**Securities**"), which Securities are covered by the Registration Statement. We understand that the Securities are to be offered and sold in the manner set forth in the Prospectus.

We have acted as your counsel in connection with the issue and sale by the Company of the Securities. We are familiar with the proceedings taken by the Board of Directors of the Company (the "**Board of Directors**") and the Pricing Committee duly appointed by the Board of Directors of the Company (the "**Pricing Committee**") in connection with the authorization, issuance and sale of the Securities. We have examined all such documents as we considered necessary to enable us to render this opinion, including but not limited to the Registration Statement, the prospectus included in the Registration Statement, the Prospectus, the Underwriting Agreement, dated January 7, 2021, by and among the Company and Jefferies LLC, as representative of the several underwriters listed on Schedule I thereto (the "**Underwriting Agreement**"), the Company's Amended and Restated Certificate of Incorporation, as amended, and the Company's Second Amended and Restated By-Laws, certain resolutions of the Board of Directors and the Pricing Committee, corporate records and instruments, and such laws and regulations as we have deemed necessary for purposes of rendering the opinions set forth

herein. In our examination, we have assumed the legal capacity of all natural persons, the genuineness of all signatures, the authenticity of all documents submitted to us as certified or photostatic copies, the authenticity of the originals of such latter documents, that any certificates representing the Securities will be duly executed and delivered and that the Securities will be issued against payment of valid consideration under applicable law. As to any facts material to the opinions expressed herein, which were not independently established or verified, we have relied upon statements and representations of officers and other representatives of the Company and others.

We express no opinion herein as to the law of any state or jurisdiction other than the laws of the State of Delaware, including statutory provisions and all applicable provisions of the Delaware Constitution and reported judicial decisions interpreting such laws of the State of Delaware, and the federal laws of the United States of America.

Based upon the foregoing, we are of the opinion that (i) the Shares have been duly authorized by the Company and, when issued and delivered by the Company against payment therefor in accordance with the terms of the Underwriting Agreement, will be validly issued, fully paid and nonassessable; (ii) the Pre-funded Warrants have been duly authorized by the Company and, when issued, delivered and paid for in accordance with the terms and conditions of the Underwriting Agreement, will constitute valid and legally binding obligations of the Company; and (iii) the Warrant Shares have been duly authorized by the Company and, when issued and delivered by the Company upon exercise of the Pre-funded Warrants in accordance with the terms of the Pre-funded Warrants, will be validly issued, fully paid and non-assessable.

We assume no obligation to supplement this opinion if any applicable law changes after the date hereof or if we become aware of any fact that might change the opinion expressed herein after the date hereof.

We hereby consent to the filing of this opinion as a part of the Registration Statement and to the reference of our firm under the caption "Legal Matters" in the Prospectus Supplement. In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Commission.

Very truly yours,

/s/ Troutman Pepper Hamilton Sanders LLP

Troutman Pepper Hamilton Sanders LLP



## Cerecor Inc. Announces Proposed Public Offering of Common Stock and Pre-Funded Warrants

ROCKVILLE, MD and CHESTERBROOK, PA, January 7, 2021 – Cerecor Inc. (Nasdaq: CERC), a biopharmaceutical company focused on becoming a leader in development and commercialization of treatments for rare pediatric and orphan diseases, announced today that it intends to offer for sale shares of its common stock and, to a certain investor in lieu thereof, pre-funded warrants to purchase shares of common stock, in an underwritten public offering. Cerecor intends to grant the underwriters a 30-day option to purchase additional shares of its common stock sold in the proposed offering of up to 15% of the aggregate number of shares of common stock plus the shares of common stock underlying the pre-funded warrants being offered in the offering. All of the securities will be offered by Cerecor. The offering is subject to market and other conditions, and there can be no assurance as to whether or when the offering may be completed, or as to the actual size or terms of the offering.

Jefferies is acting as the sole book-running manager for the offering and Oppenheimer is acting as lead manager for the offering.

Cerecor intends to use the net proceeds of the offering for general corporate purposes and working capital, primarily to support the ongoing clinical development of key assets within its pipeline and for general and administrative expenses.

This offering by Cerecor is being made pursuant to an effective shelf registration statement on Form S-3 (File No. 333-233978), previously filed with the U.S. Securities and Exchange Commission (the "SEC") on September 27, 2019 and declared effective on October 24, 2019, and the accompanying prospectus contained therein. The offering of securities will be made by means of a prospectus, including a prospectus supplement, forming a part of the effective registration statement. A preliminary prospectus supplement and the accompanying prospectus relating to and describing the terms of the offering will be filed with the SEC, and will be available on the SEC's website at <http://www.sec.gov> or by contacting Jefferies LLC at 520 Madison Avenue, 2nd Floor, New York, NY 10022, Attention: Equity Syndicate Prospectus Department, by e-mail at [prospectus\\_department@jefferies.com](mailto:prospectus_department@jefferies.com) or by calling (877) 547-6340.

Before investing in the offering, you should read in their entirety the preliminary prospectus supplement and the accompanying prospectus and the other documents that Cerecor has filed with the SEC that are incorporated by reference in the preliminary prospectus supplement and the accompanying prospectus, which provide more information about Cerecor and the offering.

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

### About Cerecor Inc.

Cerecor is a biopharmaceutical company focused on becoming a leader in the development and commercialization of treatments for rare and orphan diseases. The company is advancing its clinical-stage pipeline of innovative therapies that address unmet patient needs within rare and orphan

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diseases. The company's rare disease pipeline includes CERC-801, CERC-802 and CERC-803, which are in development for congenital disorders of glycosylation and CERC-006, an oral mTORc1/c2 inhibitor in development for the treatment of complex lymphatic malformations. The company is also developing two monoclonal antibodies, CERC-002, and CERC-007. CERC-002 targets the cytokine LIGHT (TNFSF14) and is in clinical development for treatment of severe pediatric-onset Crohn's disease, and COVID-19 acute respiratory distress syndrome. CERC-007 targets the cytokine IL-18 and is in clinical development for the treatment of Still's disease (adult-onset Still's disease (AOSD) and systemic juvenile idiopathic arthritis (sJIA)), and multiple myeloma (MM). CERC-006, 801, 802 and 803 have all received Orphan Drug Designation and Rare Pediatric Disease Designation, which makes all four eligible for a priority review voucher upon FDA approval.

For more information about Cerecor, please visit [www.cerecor.com](http://www.cerecor.com).

### **Forward-Looking Statements**

This press release may include forward-looking statements made pursuant to the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that are not historical facts. Such forward-looking statements are subject to significant risks and uncertainties that are subject to change based on various factors (many of which are beyond Cerecor's control), which could cause actual results to differ from the forward-looking statements. Such statements may include, without limitation, statements with respect to Cerecor's plans, objectives, projections, expectations and intentions and other statements identified by words such as "projects," "may," "might," "will," "could," "would," "should," "continue," "seeks," "aims," "predicts," "believes," "expects," "anticipates," "estimates," "intends," "plans," "potential," or similar expressions (including their use in the negative), or by discussions of future matters such as: the completion of the public offering, the development of product candidates or products; timing and success of trial results and regulatory review; potential attributes and benefits of product candidates; and other statements that are not historical. These statements are based upon the current beliefs and expectations of Cerecor's management but are subject to significant risks and uncertainties, including: drug development costs, timing and other risks, including reliance on investigators and enrollment of patients in clinical trials, which might be slowed by the COVID-19 pandemic; regulatory risks; Cerecor's cash position and the potential need for it to raise additional capital; general economic and market risks and uncertainties, including those caused by the COVID-19 pandemic; and those other risks detailed in Cerecor's filings with the Securities and Exchange Commission. Actual results may differ from those set forth in the forward-looking statements. Except as required by applicable law, Cerecor expressly disclaims any obligations or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in Cerecor's expectations with respect thereto or any change in events, conditions or circumstances on which any statement is based.

### **For media and investor inquiries**

James Harrell  
Investor Relations  
Chief Commercial Officer  
Cerecor Inc.  
[jharrell@cerecor.com](mailto:jharrell@cerecor.com)  
623.439.2220 *office*



## **Cerecor Inc. Announces Pricing of \$36.4 Million Public Offering of Common Stock and Pre-Funded Warrants**

ROCKVILLE, MD and CHESTERBROOK, PA, January 7, 2021 – Cerecor Inc. (Nasdaq: CERC), a biopharmaceutical company focused on becoming a leader in development and commercialization of treatments for rare pediatric and orphan diseases, announced today that it has entered into an underwriting agreement with Jefferies LLC under which the underwriters agreed to purchase, on a firm commitment basis, 12,323,077 shares of common stock of the Company, at a public offering price of \$2.60 per share (the "Public Offering Price"). In addition, and in lieu of common stock, the Company is offering to a certain existing investor pre-funded warrants to purchase up to an aggregate of 1,676,923 shares of common stock at a purchase price of \$2.599 per pre-funded warrant, which represents the per share public offering price for the common stock less the \$0.001 per share exercise price for each pre-funded warrant. The offering is expected to close on or about January 12, 2021, subject to customary closing conditions.

Jefferies is acting as the sole book-running manager for the offering and Oppenheimer & Co. is acting as lead manager for the offering.

The Company also has granted to the underwriters a 30-day option to purchase up to an additional 2,100,000 shares of common stock at the Public Offering Price to cover over-allotments in the sales of the securities, if any. The gross proceeds to Cerecor from this offering, before deducting underwriting discounts and commissions and estimated offering expenses and excluding any exercise of the underwriters' option to purchase additional shares of common stock, are expected to be approximately \$36.4 million. Assuming the full exercise of the over-allotment option, total gross proceeds to Cerecor would be approximately \$41.9 million. Cerecor intends to use the net proceeds of the offering for general corporate purposes and working capital, primarily to support the ongoing clinical development of key assets within its pipeline and for general and administrative expenses.

The securities described above are being offered by Cerecor pursuant to an effective shelf registration statement on Form S-3 (File No. 333-233978), previously filed with the U.S. Securities and Exchange Commission (the "SEC") on September 27, 2019 and declared effective on October 24, 2019, and the accompanying prospectus contained therein. The offering of securities is being made only by means of a prospectus, including a prospectus supplement, forming a part of the effective registration statement. A final prospectus supplement and the accompanying prospectus relating to and describing the terms of the offering will be filed with the SEC. Copies of the final prospectus supplement and the accompanying prospectus relating to this offering may be obtained on the SEC's website at <http://www.sec.gov> or by contacting Jefferies LLC at 520 Madison Avenue, 2nd Floor, New York, NY 10022, Attention: Equity Syndicate Prospectus Department, by e-mail at [prospectus\\_department@jefferies.com](mailto:prospectus_department@jefferies.com) or by calling (877) 547-6340.

Before investing in the offering, you should read in their entirety the prospectus supplement and the accompanying prospectus and the other documents that Cerecor has filed with the SEC that are incorporated by reference in the prospectus supplement and the accompanying prospectus, which provide more information about Cerecor and the offering.

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

#### **About Cerecor Inc.**

Cerecor is a biopharmaceutical company focused on becoming a leader in the development and commercialization of treatments for rare and orphan diseases. The company is advancing its clinical-stage pipeline of innovative therapies that address unmet patient needs within rare and orphan diseases. The company's rare disease pipeline includes CERC-801, CERC-802 and CERC-803, which are in development for congenital disorders of glycosylation and CERC-006, an oral mTORc1/c2 inhibitor in development for the treatment of complex lymphatic malformations. The company is also developing two monoclonal antibodies, CERC-002, and CERC-007. CERC-002 targets the cytokine LIGHT (TNFSF14) and is in clinical development for treatment of severe pediatric-onset Crohn's disease, and COVID-19 acute respiratory distress syndrome. CERC-007 targets the cytokine IL-18 and is in clinical development for the treatment of Still's disease (adult-onset Still's disease (AOSD) and systemic juvenile idiopathic arthritis (sJIA)), and multiple myeloma (MM). CERC-006, 801, 802 and 803 have all received Orphan Drug Designation and Rare Pediatric Disease Designation, which makes all four eligible for a priority review voucher upon FDA approval.

For more information about Cerecor, please visit [www.cerecor.com](http://www.cerecor.com).

#### **Forward-Looking Statements**

This press release may include forward-looking statements made pursuant to the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that are not historical facts. Such forward-looking statements are subject to significant risks and uncertainties that are subject to change based on various factors (many of which are beyond Cerecor's control), which could cause actual results to differ from the forward-looking statements. Such statements may include, without limitation, statements with respect to Cerecor's plans, objectives, projections, expectations and intentions and other statements identified by words such as "projects," "may," "might," "will," "could," "would," "should," "continue," "seeks," "aims," "predicts," "believes," "expects," "anticipates," "estimates," "intends," "plans," "potential," or similar expressions (including their use in the negative), or by discussions of future matters such as: the completion of the public offering, the development of product candidates or products; timing and success of trial results and regulatory review; potential attributes and benefits of product candidates; and other statements that are not historical. These statements are based upon the current beliefs and expectations of Cerecor's management but are subject to significant risks and uncertainties, including: drug development costs, timing and other risks, including reliance on investigators and enrollment of patients in clinical trials, which might be slowed by the COVID-19 pandemic; regulatory risks; Cerecor's cash position and the potential need for it to raise additional capital; general economic and market risks and uncertainties, including those caused by the COVID-19 pandemic; and those other risks detailed in Cerecor's filings with the Securities and Exchange Commission. Actual results may differ from those set forth in the forward-looking statements. Except as required by applicable law, Cerecor expressly disclaims any obligations or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in Cerecor's expectations with respect thereto or any change in events, conditions or circumstances on which any statement is based.

#### **For media and investor inquiries**

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**Supplemental Risk Factors**

*There can be no assurance that the product we are developing for the treatment of COVID-19 would be granted an Emergency Use Authorization by the FDA if we were to decide to apply for an Emergency Use Authorization. If we do not apply for an Emergency Use Authorization or, if we do apply and no Emergency Use Authorization is granted or, once granted, it is terminated, we will be unable to sell our product in the near future and will be required to pursue the drug approval process, which is lengthy and expensive.*

We may seek an Emergency Use Authorization from the FDA. If we apply and it is granted, an Emergency Use Authorization will allow us to market and sell our COVID-19 treatment without the need to pursue the lengthy and expensive drug approval process. The FDA may issue an Emergency Use Authorization during a Public Health Emergency if it determines that the potential benefits of a product outweigh the potential risks and if other regulatory criteria are met. There is no guarantee that we will apply for an Emergency Use Authorization or, if we do apply that we will be able to obtain an Emergency Use Authorization. If granted, we will rely on the FDA policies and guidance in connection with the marketing and sale of our product. If these policies and guidance change unexpectedly and/or materially or if we misinterpret them, potential sales of our product could be adversely impacted.

An Emergency Use Authorization allowing the marketing and sale of our product will terminate upon expiration of the Public Health Emergency. The FDA may also terminate the Emergency Use Authorization if safety issues or other concerns about our product arise or if we fail to comply with the conditions of authorization. If we apply for an Emergency Use Authorization, the failure to obtain such authorization or the termination of such an authorization, if obtained, would adversely impact our business, financial condition and results of operations.

*There can be no assurance of market acceptance for our COVID-19 treatment.*

The commercial success of our COVID-19 treatment will depend upon its acceptance as efficacious, safe, cost-effective and medically necessary by healthcare providers, patients, the medical community and third-party payers. There can be no assurance our COVID-19 treatment will gain market acceptance on a timely basis, if at all. Healthcare providers and patients may choose COVID-19 treatments sold by our competitors which include major pharmaceutical companies that have substantially greater resources as well as other biotechnology companies. Third party payers may prefer competitor products when making formulary and reimbursement decisions. If our product does gain market acceptance, there is no guarantee that we will be able to maintain it as new products enter the market. The United States and other countries around the world have recently begun to approve and commence distributing COVID-19 vaccines in their jurisdictions. The broad distribution of COVID-19 vaccines may reduce demand for our COVID-19 treatment as it may no longer be considered medically necessary. Failure to achieve and maintain market acceptance will have a material adverse impact on our business, financial condition and results of operations.