
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

Form 8-K

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

Date of Report (Date of earliest event reported): May 21, 2020

Dynavax Technologies Corporation

(Exact name of registrant as specified in its charter)

Commission File Number: 001-34207

Delaware
(State or other jurisdiction
of incorporation)

33-0728374
(IRS Employer
Identification No.)

2100 Powell Street, Suite 900
Emeryville, CA 94608
(Address of principal executive offices, including zip code)

(510) 848-5100
(Registrant's telephone number, including area code)

(Former name or former address, if changed since last report)

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

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

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

Title of each class:	Trading symbol(s):	Name of each exchange on which registered:
Common Stock, \$0.001 par value	DVAX	The Nasdaq Stock Market LLC

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

Emerging growth company

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

Item 8.01 Other Events.

On May 21, 2020, Dynavax Technologies Corporation (the “Company”) entered into an underwriting agreement (the “Underwriting Agreement”) with Cowen and Company, LLC, Evercore Group L.L.C. and William Blair & Company, L.L.C., as representatives of the several underwriters named therein (the “Underwriters”), relating to the issuance and sale in an underwritten public offering of 14,000,000 shares of common stock of the Company, par value \$0.001 per share (the “Common Stock”). The price to the public is \$5.00 per share, and the Underwriters have agreed to purchase the shares from us pursuant to the Underwriting Agreement at a price of \$4.70 per share. Under the terms of the Underwriting Agreement, we also granted the Underwriters an option exercisable for 30 days to purchase up to an additional 2,100,000 shares of Common Stock at the public offering price, less underwriting discounts and commissions. The offering is expected to close on or about May 27, 2020, subject to customary closing conditions.

The Underwriting Agreement contains customary representations, warranties and agreements by us, customary conditions to closing, indemnification obligations of us and the Underwriters, including for liabilities under the Securities Act of 1933, as amended, other obligations of the parties and termination provisions. 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 such agreement, and may be subject to limitations agreed upon by such parties.

The offering is being made pursuant to our effective registration statement on Form S-3 and an accompanying prospectus (Registration Statement No. 333-219781) previously filed with the Securities and Exchange Commission and a preliminary and final prospectus supplement thereunder. The Underwriting Agreement is filed as Exhibit 1.1 to this report, and the description of the material terms of the Underwriting Agreement is qualified in its entirety by reference to such exhibit. A copy of the opinion of Cooley LLP relating to the legality of the issuance and sale of the shares in the offering is attached as Exhibit 5.1 hereto.

Item 9.01 Financial Statements and Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
1.1	<u>Underwriting Agreement, dated May 21, 2020, by and among Dynavax Technologies Corporation, Cowen and Company, LLC, Evercore Group L.L.C. and William Blair & Company, L.L.C., as representatives of the several underwriters named therein.</u>
5.1	<u>Opinion of Cooley LLP.</u>
23.1	<u>Consent of Cooley LLP (included in Exhibit 5.1).</u>
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

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

Dynavax Technologies Corporation

Date: May 22, 2020

By: /s/ Michael Ostrach

Michael Ostrach

Senior Vice President

14,000,000 Shares
DYNAVAX TECHNOLOGIES CORPORATION
Common Stock
UNDERWRITING AGREEMENT

May 21, 2020

COWEN AND COMPANY, LLC
EVERCORE GROUP L.L.C.
WILLIAM BLAIR & COMPANY, L.L.C.
As Representatives of the several Underwriters

c/o COWEN AND COMPANY, LLC
599 Lexington Avenue
25th Floor
New York, NY 10022

c/o EVERCORE GROUP, L.L.C.
55 East 52nd Street
New York, New York 10055

c/o WILLIAM BLAIR & COMPANY, L.L.C.
150 North Riverside Plaza
Chicago, Illinois 60606

Ladies and Gentlemen:

1. *INTRODUCTORY.* Dynavax Technologies Corporation, a Delaware corporation (the “**Company**”), proposes to sell, pursuant to the terms of this Agreement, to the several underwriters named in Schedule A hereto (the “**Underwriters**,” or, each, an “**Underwriter**”), an aggregate of 14,000,000 shares of common stock, \$0.001 par value per share (the “**Common Stock**”) of the Company (the “**Firm Stock**”). The Company also proposes to sell to the Underwriters, upon the terms and conditions set forth in Section 3 hereof, up to an additional 2,100,000 shares of Common Stock (the “**Optional Stock**”). The Firm Stock and the Optional Stock are hereinafter collectively referred to as the “**Stock**”. Cowen and Company, LLC (“**Cowen**”), Evercore Group L.L.C. (“**Evercore**”) and William Blair & Company, L.L.C. are acting as the representatives of the several Underwriters and in such capacity are hereinafter referred to as the “**Representatives**.”

A registration statement” on Form S-3, as amended (File No. 333-219781) in respect of the Stock has been filed with the Securities and Exchange Commission (the “**Commission**”) not earlier than three (3) years prior to the date hereof; such registration statement, and any post-effective amendment thereto, became effective on filing and/or has been declared effective by the Commission in such form; and no stop order suspending the effectiveness of such registration statement or any part thereof has been issued and no proceeding for that purpose has been initiated or threatened by the Commission, and no notice of objection of the Commission to the use of such registration statement or any post-effective amendment thereto pursuant to Rule 401(g) (2) of the rules and regulations (the “**Rules and Regulations**”) promulgated under the Securities Act of 1933, as amended (the “**Securities Act**”) has been received by the Company (the prospectus filed as part of such registration statement in the form in which it has most recently been filed with the Commission on or prior to the date of this Agreement, is hereinafter called the “**Base Prospectus**”). Such registration statement, including all exhibits thereto, but excluding Form T-1, and including any prospectus supplement relating to the Stock that is filed with the Commission and deemed by virtue of Rule 430B of the Rules and Regulations to be part of such registration statement, are hereinafter collectively

called the “**Registration Statement**.” The preliminary prospectus supplement dated May 21, 2020 describing the Stock and the offering thereof, together with the Base Prospectus, is called the “**Preliminary Prospectus**,” and the Preliminary Prospectus and any other preliminary prospectus supplement to the Base Prospectus that describes the Stock and the offering thereof and is used 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 Stock 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 Stock 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. Any registration statement filed by the Company pursuant to Rule 462(b) under the Securities Act is called the “**Rule 462(b) Registration Statement**,” and from and after the date and time of filing of the Rule 462(b) Registration Statement, the term “**Registration Statement**” shall include the Rule 462(b) Registration Statement. As used herein, the terms “**Registration Statement**,” “**Rule 462(b) Registration Statement**,” “**Preliminary Prospectus**,” “**preliminary prospectus**,” “**Base Prospectus**,” “**Time of Sale Disclosure Package**” and “**Prospectus**” shall include the documents incorporated or deemed to be incorporated by reference therein. All references in this Agreement to amendments or supplements to the Registration Statement, the Rule 462(b) Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Disclosure Package 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**”) which is or is deemed to be incorporated by reference in the Registration Statement, the Rule 462(b) Registration Statement, the Preliminary Prospectus, such preliminary prospectus, the Base Prospectus, the Time of Sale Disclosure Package or the Prospectus, as the case may be. All references in this Agreement to the Registration Statement, the Rule 462(b) Registration Statement, the Preliminary Prospectus, any other preliminary prospectus, the Base Prospectus or the Prospectus, or any amendments or supplements to any of the foregoing, shall include any copy thereof filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval System (“**EDGAR**”).

As used herein, “**Applicable Time**” is 7:15 p.m. (New York time) on May 21, 2020. As used herein, “**free writing prospectus**” has the meaning set forth in Rule 405 under the Securities Act, and “**Time of Sale Disclosure Package**” 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, the information identified on Schedule C hereto, and each “road show” (as defined in Rule 433 under the Securities Act), if any, related to the offering of the Stock contemplated hereby that is a “written communication” (as defined in Rule 405 under the Securities Act) (each such road show, a “**Road Show**”).

All references in this Agreement to financial statements and schedules and other information which are “**contained**,” “**included**” or “**stated**” in the Registration Statement, the Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Disclosure Package 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 Preliminary Prospectus, any preliminary prospectus, the Base Prospectus, the Time of Sale Disclosure Package or the Prospectus, as the case may be.

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

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

(a) *Compliance with Registration Requirements.* The Registration Statement (including, for avoidance of doubt, any Rule 462(b) Registration Statement) has become effective under the Securities Act. The Company has complied to the Commission’s satisfaction with all requests of

the Commission for additional or supplemental information, if any. No stop order suspending the effectiveness of the Registration Statement (including, for avoidance of doubt, any Rule 462(b) Registration Statement) is in effect and no proceedings for such purpose have been instituted or are pending or, to the Company's knowledge, are contemplated or threatened by the Commission.

Each preliminary prospectus and the Prospectus when filed complied or will comply in all material respects with the Securities Act and, if filed by electronic transmission pursuant to EDGAR (except as may be permitted by Regulation S-T under the Securities Act), was identical to the copy thereof delivered to the Underwriters for use in connection with the offer and sale of the Stock. Each of the Registration Statement (including, for avoidance of doubt, any Rule 462(b) Registration Statement) and any post-effective amendment thereto, at the time it became effective and at all subsequent times during which 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 any sale of Stock by any Underwriter or a dealer (such times, the "**Prospectus Delivery Period**"), complied and will comply in all material respects with the Securities Act and did not and will not contain any 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 not misleading. As of the Applicable Time, the Time of Sale Disclosure Package (including any preliminary prospectus wrapper) did not, and at the time of each sale of the Stock and at the Closing Date or the Option Closing Date (as defined in Section 3), the Time of Sale Disclosure Package, as then amended or supplemented by the Company, if applicable, will not, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Prospectus (including any Prospectus wrapper), as then amended or supplemented, as of the date of the Final Prospectus Supplement and at all subsequent times during the Prospectus Delivery Period, did not and will not contain any 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 under which they were made, not misleading. The representations and warranties set forth in the three immediately preceding sentences do not apply to statements in or omissions from the Registration Statement or any post-effective amendment thereto, or any preliminary prospectus, the Prospectus or the Time of Sale Disclosure Package, or any amendments or supplements thereto, made in reliance upon and in conformity with information relating to any Underwriter furnished to the Company in writing by the Representatives expressly for use therein, it being understood and agreed that the only such information furnished by the Representatives to the Company consists of the information described in Section 17 below. There are no contracts or other documents required to be described in the Time of Sale Disclosure Package or the Prospectus or to be filed as exhibits to the Registration Statement which have not been described or filed as required.

The Company is not an "ineligible issuer" in connection with the offering of the Stock pursuant to Rules 164, 405 and 433 under the Securities Act. Each free writing prospectus that the Company is required to file pursuant to Rule 433(d) under the Securities Act has been, or will be, filed with the Commission in accordance with the requirements of the Securities Act. Each free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act or that was prepared by or on behalf of or used or referred to by the Company complies or will comply in all material respects with the requirements of Rule 433 under the Securities Act including timely filing with the Commission or retention where required and legending, and each such free writing prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Stock 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 Prospectus or any preliminary prospectus. Except for the free writing prospectuses, if any, identified in Schedule B hereto, and electronic road shows, if any, furnished to you before first use, the Company has not prepared, used or referred to, and will not, without your prior consent, prepare, use or refer to, any free writing prospectus.

- (b) *Offering Materials Furnished to Underwriters.* If so requested by the Representatives, the Company has delivered to the Representatives one manually signed copy of each of the Registration Statement (including exhibits thereto), each amendment thereto and each consent and certificate of experts filed as a part thereof.
- (c) *Distribution of Offering Material By the Company.* The Company has not distributed and will not distribute, prior to the completion of the Underwriters' distribution of the Stock, any offering material in connection with the offering and sale of the Stock other than a preliminary prospectus, the Time of Sale Disclosure Package, the Prospectus, any free writing prospectus reviewed and consented to by the Representatives, or the Registration Statement.
- (d) *The Underwriting Agreement.* This Agreement has been duly authorized, executed and delivered by, and is a valid and binding agreement of, the Company, enforceable against the Company in accordance with its terms, except as rights to indemnification hereunder may be limited by applicable law and except as the enforcement hereof 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.
- (e) *Authorization of the Stock.* The Stock has been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company against payment therefor pursuant to this Agreement, will be validly issued, fully paid and nonassessable, and the issuance and sale of the Stock is not subject to any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase the Stock..
- (f) *No Applicable Registration or Other Similar Rights.* There are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by this Agreement.
- (g) *No Material Adverse Change.* Except as otherwise disclosed in the Time of Sale Disclosure Package, subsequent to the respective dates as of which information is given in the Time of Sale Disclosure Package: (i) there has been no material adverse change, or any development that could reasonably be expected to result in a material adverse change, in the condition, financial or otherwise, or in the earnings, business, operations or prospects, whether or not arising from transactions in the ordinary course of business, of the Company and its subsidiaries, considered as one entity (any such change is called a "**Material Adverse Change**"); (ii) the Company and its subsidiaries, considered as one entity, have not incurred any material liability or obligation, indirect, direct or contingent, not in the ordinary course of business nor entered into any material transaction or agreement not in the ordinary course of business; and (iii) there has been no dividend or distribution of any kind declared, paid or made by the Company or, except for dividends paid to the Company or other subsidiaries, its subsidiaries on any class of capital stock or repurchase or redemption by the Company or its subsidiaries of any class of capital stock.
- (h) *Independent Accountants.* Ernst & Young LLP, who have expressed their opinion with respect to the financial statements (which term as used in this Agreement includes the related notes thereto) filed with the Commission and incorporated by reference into the Registration Statement, the Preliminary Prospectus, the Prospectus and Time of Sale Disclosure Package (each, an "**Applicable Prospectus**" and collectively, the "**Applicable Prospectuses**"), are (i) independent registered public accountants as required by the Securities Act and the Exchange Act, (ii) in compliance with the applicable requirements relating to the qualification of accountants under Rule 2-01 of Regulation S-X under the Securities Act and (iii) a registered public accounting firm as defined by the Public Company Accounting Oversight Board ("**PCAOB**") whose registration has not been suspended or revoked and, to the Company's knowledge, who has not requested such registration to be withdrawn.
- (i) *Preparation of the Financial Statements and Data.* The financial statements filed with the Commission and incorporated by reference into the Registration Statement, the Preliminary

Prospectus, the Time of Sale Disclosure Package and the Prospectus present fairly the consolidated financial position of the Company and its subsidiaries as of and at the dates indicated and the results of their operations, stockholders' equity and cash flows for the periods specified. Such financial statements have been prepared in conformity with generally accepted accounting principles in the United States applied on a consistent basis throughout the periods involved, except as may be expressly stated in the related notes thereto. No other financial statements or supporting schedules are required to be included in the Registration Statement or any Applicable Prospectus. The financial data set forth in each Applicable Prospectus fairly present the information set forth therein on a basis consistent with that of the audited financial statements incorporated by reference in the Registration Statement and each Applicable Prospectus. To the Company's knowledge, no person who has been suspended or barred from being associated with a registered public accounting firm, or who has failed to comply with any sanction pursuant to Rule 5300 promulgated by the PCAOB, has participated in or otherwise aided the preparation of, or audited, the financial statements, supporting schedules or other financial data filed with the Commission as a part of the Registration Statement and included in any Applicable Prospectus.

(j) *Company's Accounting System.* The Company and its subsidiaries make and keep accurate books and records and maintain a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles as applied in the United States and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is unaware of any material weakness in the Company's internal control over financial reporting (whether or not remediated) as of December 31, 2019 or at any time since such date; since December 31, 2019, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

(k) *Incorporation and Good Standing of the Company and its Subsidiaries.* Each of the Company and each of its subsidiaries has been duly incorporated or organized, as the case may be, and is validly existing as a corporation or other entity, as applicable, in good standing under the laws of the jurisdiction of its incorporation or organization and has the power and authority (corporate or other) to own, lease and operate its properties and to conduct its business as described in each Applicable Prospectus and, in the case of the Company, to enter into and perform its obligations under this Agreement, except where the failure to be in good standing would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. Each of the Company and each of its subsidiaries is duly qualified as a foreign corporation or other entity, as applicable, to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to be so qualified or in good standing would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. Except as otherwise disclosed in the Time of Sale Disclosure Package or the Applicable Prospectus, all of the issued and outstanding capital stock or other equity or ownership interests of each of the Company's subsidiaries have been duly authorized and validly issued, are fully paid and nonassessable and are owned by the Company (directly or through the Company's other subsidiaries) free and clear of any security interest, mortgage, pledge, lien, encumbrance or adverse claim. The Company does not own or control, directly or indirectly, any corporation, association or other entity, and the Company does not have any "subsidiary" (as defined in Rule 405 under the Securities Act), other than Dynavax GmbH.

(l) *Capitalization and Other Capital Stock Matters.* The authorized, issued and outstanding capital stock of the Company is as set forth in each Applicable Prospectus as of the dates referred to therein (other than for subsequent issuances, if any, pursuant to employee benefit plans described in the Time of Sale Disclosure Package or upon the exercise of outstanding options or warrants or vesting and settlement of outstanding restricted stock units described in each Applicable Prospectus). The Common Stock (including the Stock) conform in all material respects to the description thereof contained in the Time of Sale Disclosure Package. All of the issued and outstanding shares of Common Stock have been duly authorized and validly issued, are fully paid and nonassessable and have been issued in compliance with federal and state securities laws. None of the outstanding shares of Common Stock was issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. There are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company or its subsidiaries other than those accurately described in each Applicable Prospectus. The description of the Company's stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, set forth in each Applicable Prospectus accurately and fairly presents the information required to be shown with respect to such plans, arrangements, options and rights.

(m) *Stock Exchange Listing.* The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is listed on the Nasdaq Capital Market, and the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Nasdaq Capital Market, nor has the Company received any notification that the Commission or the Nasdaq Capital Market is contemplating terminating such registration or listing.

(n) *Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required.* Neither the Company nor any of its subsidiaries is in violation of its charter or bylaws, or similar organizational documents, as applicable, or is in default (or, with the giving of notice or lapse of time, would be in default) ("**Default**") under any indenture, mortgage, loan or credit agreement, note, contract or other agreement, franchise, lease or other instrument to which the Company or any of its subsidiaries is a party or by which either of them may be bound (including, without limitation, any credit agreement, indenture, pledge agreement, security agreement or other instrument or agreement evidencing, guaranteeing, securing or relating to indebtedness of the Company or any of its subsidiaries), or to which any of the property or assets of the Company or any of its subsidiaries is subject (each, an "**Existing Instrument**"), except for such Defaults as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. The Company's execution, delivery and performance of this Agreement, consummation of the transactions contemplated hereby, thereby and by each Applicable Prospectus and the issuance and sale of the Stock (i) have been duly authorized by all necessary corporate action and will not result in any violation of the provisions of the charter or by-laws, or similar organizational documents, as applicable, of the Company or any of its subsidiaries, (ii) will not conflict with or constitute a breach of, or Default or a Debt Repayment Triggering Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company or any of its subsidiaries pursuant to, or require the consent of any other party to, any Existing Instrument and (iii) will not result in any violation of any law, administrative regulation or administrative or court decree applicable to the Company or any of its subsidiaries, except, in the case of clauses (ii) and (iii), for such breaches, Defaults, results or violations as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. No consent, approval, authorization or other order of, or registration or filing with, any court or other governmental or regulatory authority or agency, is required for the Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby, thereby and by each Applicable Prospectus, except such as have been obtained or made or

will be made by the Company under the Securities Act or that may be required under applicable state securities or blue sky laws and from the Financial Industry Regulatory Authority, Inc. (“FINRA”). As used herein, a “**Debt Repayment Triggering Event**” means any event or condition which gives, or with the giving of notice or lapse of time would give, the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder’s behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its subsidiaries.

(o) *No Material Actions or Proceedings.* Except as otherwise disclosed in the Time of Sale Disclosure Package, there are no legal or governmental actions, suits or proceedings pending or, to the Company’s knowledge, threatened (i) against or affecting the Company or any of its subsidiaries, (ii) which have as the subject thereof any officer or director of, or property owned or leased by, the Company or any of its subsidiaries or (iii) relating to environmental or discrimination matters, where in any such case (A) there is (in the case of pending actions, suits or proceedings, to the Company’s knowledge) a substantial likelihood that such action, suit or proceeding will be determined adversely to the Company, any of its subsidiaries or such officer or director, (B) any such action, suit or proceeding, if so determined adversely, would reasonably be expected to result in a Material Adverse Change or adversely affect the consummation of the transactions contemplated by this Agreement or (C) any such action, suit or proceeding is or would be material in the context of the sale of shares of Common Stock. No material labor dispute with the employees of the Company or any of its subsidiaries, or, to the Company’s knowledge, with the employees of any principal supplier, manufacturer, customer or contractor of the Company, exists or (in the case of labor disputes with the employees of the Company or any of its subsidiaries, to the Company’s knowledge) is threatened or imminent.

(p) *Intellectual Property Rights.* Except as otherwise disclosed in the each Applicable Prospectus, the Company and each of its subsidiaries own or possess (or can acquire on reasonable terms) sufficient trademarks, trade names, patent rights, copyrights, domain names, licenses, approvals, trade secrets and other similar rights (collectively, “**Intellectual Property Rights**”) reasonably necessary to conduct their businesses as now conducted, except to the extent the failure to own, possess or acquire on reasonable terms would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change. Except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, and except as disclosed in each Applicable Prospectus, (i) there are no third parties who have or, to the Company’s knowledge, will be able to establish rights to any Intellectual Property Rights; (ii) to the Company’s knowledge, there is no infringement by third parties of any Intellectual Property Rights; (iii) there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others challenging the Company’s rights in or to any Intellectual Property Rights, and the Company is unaware of any facts that would form a reasonable basis for any such action, suit, proceeding or claim; (iv) there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others challenging the validity, enforceability or scope of any Intellectual Property Rights, and the Company is unaware of any facts that would form a reasonable basis for any such action, suit, proceeding or claim; and (v) there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others that the Company or any of its subsidiaries infringes or otherwise violates, or would, upon the commercialization of products or services described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus as under development and as currently configured, infringe or violate, any currently issued patent, trademark, tradename, service name, copyright, trade secret or other proprietary rights of others, and the Company is unaware of any facts that would form a reasonable basis for any such action, suit, proceeding or claim. None of the technology employed by the Company or any of its subsidiaries has been obtained or is being used by the Company or any of its subsidiaries in violation of any contractual obligation binding on the Company or any of its subsidiaries or, to the Company’s knowledge, any of its or its subsidiaries’ officers, directors or employees or otherwise in violation of the rights of any persons, except in each case for such violations as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change.

(q) *Clinical Trials*. The clinical and pre-clinical trials conducted by or on behalf of or sponsored by the Company or its subsidiaries, or in which the Company or its subsidiaries have participated, that are described in the Time of Sale Disclosure Package or the results of which are referred to in the Time of Sale Disclosure Package, as applicable, and are intended to be submitted to Regulatory Authorities as a basis for product approval, were and, if still pending, are being conducted by the Company or, to the knowledge of the Company on behalf of the Company, in all material respects in accordance with the medical and scientific research procedures described in the applicable trial protocols and all applicable statutes, rules and regulations of the United States Food and Drug Administration and comparable drug regulatory agencies outside of the United States to which they are subject (collectively, the “**Regulatory Authorities**”), including, without limitation, 21 C.F.R. Parts 50, 54, 56, 58, and 312. The descriptions in the Time of Sale Disclosure Package of the results of such studies and tests are accurate and complete in all material respects and fairly present the data derived from such trials. The Company has no knowledge of any other clinical trials the results of which reasonably call into question the results described or referred to in the Time of Sale Disclosure Package. The Company and its subsidiaries have operated and are currently in compliance with all applicable statutes, rules and regulations of the Regulatory Authorities, except as would not reasonably be expected to have a Material Adverse Effect. In the last two years, neither the Company nor any of its subsidiaries has received any written notices, correspondence or other written communication from the Regulatory Authorities or any other governmental agency requiring or threatening the premature termination or suspension of any clinical or pre-clinical trials that are described in the Time of Sale Disclosure Package or the results of which are referred to in the Time of Sale Disclosure Package, and, to the Company’s knowledge, there are no reasonable grounds for same.

(r) *All Necessary Permits, Etc.* The Company and each of its subsidiaries possess such valid and current certificates, authorizations or permits issued by the appropriate state, federal or foreign regulatory agencies or bodies necessary to conduct their respective businesses as currently conducted by them and described in the Time of Sale Disclosure Package; and neither the Company nor any of its subsidiaries has received, or has any reason to believe that it will receive, any notice of proceedings relating to the revocation or modification of, or non-compliance with, any such certificate, authorization or permit which, individually or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would reasonably be expected to result in a Material Adverse Change.

(s) *Title to Properties*. Except as otherwise disclosed in the Time of Sale Disclosure Package, the Company and each of its subsidiaries have good and marketable title to all of the real and personal property and other assets reflected as owned in the financial statements referred to in Section 2(h) above (or elsewhere in any Applicable Prospectus), in each case that are material to the business of the Company and its subsidiaries taken as a whole and in each case free and clear of any security interests, mortgages, liens, encumbrances, equities, adverse claims and other defects, except such as do not materially and adversely affect the value of such property and assets and do not materially interfere with the use made or proposed to be made of such property and assets by the Company or any of its subsidiaries. To the Company’s knowledge, the real property, improvements, equipment and personal property held under lease by the Company or any of its subsidiaries are held under valid and enforceable leases, with such exceptions as are not material and do not materially interfere with the use made or proposed to be made of such real property, improvements, equipment or personal property by the Company or any of its subsidiaries.

(t) *Tax Law Compliance*. The Company and its consolidated subsidiaries have filed all necessary federal, state and foreign income and franchise tax returns (or have properly requested extensions thereof) and have paid all taxes required to be paid by any of them and, if due and

payable, any related or similar assessment, fine or penalty levied against any of them except as may be being contested in good faith and by appropriate proceedings. The Company has made adequate charges, accruals and reserves in the applicable financial statements referred to in Section 2(h) above in respect of all federal, state and foreign income and franchise taxes for all periods as to which the tax liability of the Company or its consolidated subsidiaries has not been finally determined.

(u) *Company Not an "Investment Company"*. The Company is not, and will not, either after receipt of payment for the Stock or after the application of the proceeds therefrom as described under "Use of Proceeds" in each Applicable Prospectus, be, required to register as an "investment company" or an entity "controlled" by an "investment company" under the Investment Company Act of 1940, as amended (the "**Investment Company Act**"), and will, during the Prospectus Delivery Period, conduct its business in a manner so that it will not become subject to the Investment Company Act.

(v) *Insurance*. Except as otherwise disclosed in the Time of Sale Disclosure Package, each of the Company and each of its subsidiaries is insured by recognized, financially sound and reputable institutions with policies in such amounts and with such deductibles and covering such risks as are reasonably adequate and customary for their businesses as currently conducted and described in the Time of Sale Disclosure Package, including, but not limited to, policies covering real and personal property owned or leased by the Company and its subsidiaries against theft, damage, destruction and acts of vandalism and policies covering the Company and its subsidiaries for product liability claims and clinical trial liability claims. The Company has no reason to believe that it or its subsidiaries will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not result in a Material Adverse Change. During the past three years, neither of the Company nor any of its subsidiaries has been denied any insurance coverage material to the Company or such subsidiary, respectively, which it has sought or for which it has applied.

(w) *No Price Stabilization or Manipulation; Compliance with Regulation M*. The Company has not taken, directly or indirectly, any action designed to or that might be reasonably expected to cause or result in stabilization or manipulation of the price of the Common Stock or any other "reference security" (as defined in Rule 100 of Regulation M under the Exchange Act ("**Regulation M**")) whether to facilitate the sale or resale of the Stock or otherwise, and has taken no action which would directly or indirectly violate Regulation M. The Company acknowledges that the Underwriters may engage in passive market making transactions in the Stock on the Nasdaq Capital Market in accordance with Regulation M.

(x) *Related Party Transactions*. 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 any Applicable Prospectus which have not been described as required.

(y) *S-3 Eligibility*. At the time the Registration Statement was originally declared effective, the Company met the then applicable requirements for use of Form S-3 under the Securities Act (without reliance on General Instruction I.B.6 of Form S-3).

(z) *Exchange Act Compliance*. The documents incorporated or deemed to be incorporated by reference in the Prospectus, at the time they were or hereafter are filed with the Commission, complied and will comply in all material respects with the requirements of the Exchange Act, and, when read together with the other information in the Prospectus, at the time the Registration Statement and any amendments thereto became effective and at the Closing Date, 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 the light of the circumstances under which they were made, not misleading.

(aa) *FINRA Matters.* All of the information provided to the Underwriters or to counsel for the Underwriters by the Company, its officers and directors and, to the Company's knowledge, the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with letters, filings or other supplemental information provided to FINRA pursuant to FINRA Rule 5110 or Conduct Rule 2720 of the National Association of Securities Dealers, Inc. (the "NASD"), is true, complete and correct. In accordance with FINRA Conduct Rule 5110(b)(7)(C)(i), the Stock has been registered with the Commission on Form S-3 under the Securities Act pursuant to the standards for such Form S-3 in effect prior to October 21, 1992.

(bb) *Parties to Lock-Up Agreements.* Each of the Company's directors and executive officers has executed and delivered to the Representatives a lock-up agreement in the form of Exhibit I hereto. Schedule D hereto contains a true, complete and correct list of all directors and executive officers of the Company. If any additional persons shall become directors or executive officers of the Company prior to the end of the Company Lock-up Period (as defined below), the Company shall cause each such person, prior to or contemporaneously with their appointment or election as a director or executive officer of the Company, to execute and deliver to the Representatives an agreement in the form attached hereto as Exhibit I.

(cc) *Statistical and Market-Related Data.* The statistical, demographic and market-related data included in the Registration Statement and each Applicable Prospectus are based on or derived from sources that the Company believes to be reliable and accurate or represent the Company's good faith estimates that are made on the basis of data derived from such sources.

(dd) *No Unlawful Contributions or Other Payments.* Neither the Company nor any of its subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or any of its subsidiaries, has made any contribution or other payment to any official of, or candidate for, any federal, state or foreign office in violation of any law or of the character required to be disclosed in the Registration Statement and each Applicable Prospectus.

(ee) *Disclosure Controls and Procedures; Deficiencies in or Changes to Internal Control Over Financial Reporting.* The Company has established and maintains disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), which (i) are designed to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to the Company's principal executive officer and its principal financial officer by others within those entities, particularly during the periods in which the periodic reports required under the Exchange Act are being prepared; (ii) have been evaluated by management of the Company for effectiveness as of the end of the Company's most recent fiscal quarter; and (iii) the Company's principal executive officer and principal financial officer have concluded to be effective at the reasonable assurance level. Based on the most recent evaluation of its disclosure controls and procedures (in accordance with Rule 13a-15(b)), the Company is not aware of (x) any material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information or (y) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

(ff) *Compliance with Environmental Laws.* Except as described in each Applicable Prospectus and except as would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Change, (i) neither the Company nor any of its subsidiaries is in violation of any federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations

relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products (collectively, "**Hazardous Materials**") or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, "**Environmental Laws**"), (ii) the Company and its subsidiaries have all permits, authorizations and approvals required under any applicable Environmental Laws and are each in compliance with their requirements, (iii) there are no pending or threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigation or proceedings relating to any Environmental Law against the Company or any of its subsidiaries and (iv) there are, to the Company's knowledge, no events or circumstances that might reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or governmental body or agency, against or affecting the Company or any of its subsidiaries relating to Hazardous Materials or any Environmental Laws.

(gg) *ERISA Compliance.* The Company and its subsidiaries and any "employee benefit plan" (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, "**ERISA**")) established or maintained by the Company, and of its subsidiaries or their ERISA Affiliates (as defined below) are in compliance in all material respects with ERISA. "**ERISA Affiliate**" means, with respect to the Company or any of its subsidiaries, any member of any group of organizations described in Sections 414(b),(c),(m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the "**Code**") of which the Company or any of its subsidiaries is a member. No "reportable event" (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any "employee benefit plan" established or maintained by the Company, any of its subsidiaries or any of their ERISA Affiliates. No "employee benefit plan" established or maintained by the Company, any of its subsidiaries or any of their ERISA Affiliates, if such "employee benefit plan" were terminated, would have any "amount of unfunded benefit liabilities" (as defined under ERISA). Neither the Company nor any of its subsidiaries nor any of their ERISA Affiliates has incurred or reasonably expects to incur any liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any "employee benefit plan" or (ii) Sections 412, 4971, 4975 or 4980B of the Code. Each "employee benefit plan" established or maintained by the Company, any of its subsidiaries or any of their ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, whether by action or failure to act, which would reasonably be expected to result in the loss of such qualification.

(hh) *Brokers.* Except as contemplated by 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.

(ii) *No Outstanding Loans or Other Extensions of Credit.* Since the adoption of Section 13(k) of the Exchange Act, neither the Company nor any of its subsidiaries has extended or maintained credit, arranged for the extension of credit, or renewed any extension of credit, in the form of a personal loan, to or for any director or executive officer (or equivalent thereof) of the Company or any of its subsidiaries except for such extensions of credit as are expressly permitted by Section 13(k) of the Exchange Act.

(jj) *Dividend Restrictions.* None of the subsidiaries of the Company is currently prohibited or restricted, directly or indirectly, from paying dividends to the Company, or from making any other distribution with respect to such subsidiary's equity securities or from repaying to the Company or any other subsidiary any amounts that may from time to time become due under any loans or advances to such subsidiary from the Company or from transferring any property or assets to the Company or any other subsidiary.

(kk) *Foreign Corrupt Practices Act*. Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, employee, agent, affiliate or other person acting on behalf of the Company or any subsidiary, has (i) used any corporate funds for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity, (ii) made any direct or indirect unlawful payment to foreign or domestic government officials or employees, political parties or campaigns, political party officials, or candidates for political office from corporate funds, (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended, or any applicable anti-corruption laws, rules, or regulation of any other jurisdiction in which the Company or any subsidiary conducts business, or (iv) made any other unlawful bribe, rebate, payoff, influence payment, kickback, or other unlawful payment to any person.

(ll) *Money Laundering Laws*. The operations of the Company and its subsidiaries are, and have been conducted at all times, in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any related or similar applicable 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 Company’s knowledge, threatened.

(mm) *OFAC*. (A) Neither the Company nor any of its subsidiaries, nor any director, officer or employee thereof, nor, to the knowledge of the Company, any agent, affiliate, representative or other person acting on behalf of the Company or any of its subsidiaries, is an individual or entity (“**Person**”) that is, or is owned or controlled by a Person that is: (i) the subject of any sanctions administered or enforced by the U.S. Department of Treasury’s Office of Foreign Assets Control (“**OFAC**”), the United Nations Security Council (“**UNSC**”), the European Union (“**EU**”), Her Majesty’s Treasury (“**HMT**”), or other relevant sanctions authority (collectively, “**Sanctions**”), nor (ii) located, organized or resident in a country or territory that is the subject of a U.S. government embargo (including, without limitation, Cuba, Iran, North Korea, Sudan, Syria and the Crimea).

(B) 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: (i) to fund or facilitate any activities or business of or with any Person that, at the time of such funding or facilitation, is the subject of Sanctions, or in any country or territory that, at the time of such funding or facilitation, is the subject of a U.S. government embargo; or (ii) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(C) For the past five (5) years, the Company and its subsidiaries have not knowingly engaged in, are not now knowingly engaged in, and will not engage in, any direct or indirect dealings or transactions with any Person that at the time of the dealing or transaction is or was the subject of Sanctions or any country or territory that, at the time of the dealing or transaction is or was the subject of a U.S. government embargo.

(nn) *Privacy Laws*. The Company and its subsidiaries are, and at all prior times were, in material compliance with all applicable data privacy and security laws and regulations, including, without limitation, the Health Insurance Portability and Accountability Act (“**HIPAA**”), as amended by the Health Information Technology for Economic and Clinical Health Act (the “**HITECH Act**”) (42 U.S.C. Section 17921 et seq.); and the Company and its subsidiaries have taken all necessary actions to comply with the European Union General Data Protection Regulation (“**GDPR**”) (EU 2016/679) (collectively, “**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**”). The Company provides accurate notice of its Policies to its customers, employees, third party vendors and representatives. The Policies provide accurate and sufficient notice of the Company’s then-current privacy practices relating to its subject matter and such Policies do not contain any material omissions of the Company’s then-current privacy practices. “**Personal Data**” means (i) a natural persons’ name, street address, telephone number, email address, photograph, social security number, bank information, or customer or account number; (ii) any information which would qualify as “personally identifying information” under the Federal Trade Commission Act, as amended; (iii) Protected Health Information as defined by HIPAA; (iv) “personal data” as defined by GDPR; and (v) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any data related to an identified person’s health or sexual orientation. None of such disclosures made or contained in any of the Policies have been inaccurate, misleading, deceptive or in violation of any Privacy Laws or Policies in any material respect. The execution, delivery and performance of this Agreement will not result in a breach of any Privacy Laws or Policies. Neither the Company nor any of its subsidiaries, (i) has received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is currently conducting or paying for, in whole or in part, any investigation, remediation or other corrective action pursuant to any Privacy Law; or (iii) is a party to any order, decree, or agreement that imposed any obligation or liability under any Privacy Law.

(oo) *IT Systems.* (i)(x) To the Company’s knowledge, there has been no security breach or other material compromise of or relating to any of the Company’s and its subsidiaries’ information technology and computer systems, networks, hardware, software, sensitive data (including any of the confidential and proprietary data of their respective customers, employees, suppliers, vendors and any other third party data maintained by or on behalf of the Company and its subsidiaries), equipment or technology (collectively, “**IT Systems and Data**”), and (y) the Company and its subsidiaries have not been notified of, and have no knowledge of any event or condition that would reasonably be expected to result in any security breach or other material compromise of their IT Systems and Data, (ii) the Company and its subsidiaries have complied, and are presently in material compliance with, all applicable laws, statutes or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority and all internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the implementation of commercially reasonable measures designed to protect such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, in the case of this clause (ii), individually or in the aggregate, have a Material Adverse Change; and (iii) the Company and its subsidiaries have implemented backup and disaster recovery technology consistent with commonly accepted industry standards and practices.

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

The purchase price per share to be paid by the Underwriters to the Company for the Stock will be \$4.70 per share (the “**Purchase Price**”).

The Company will deliver the Firm Stock to the Representatives for the respective accounts of the several Underwriters, through the facilities of The Depository Trust Company, issued in such names and in such denominations as the Representatives may direct by notice in writing to the Company given at or prior to 12:00 Noon, New York time, on the second (2nd) full business day preceding the Closing Date

against payment of the aggregate Purchase Price therefor by wire transfer in federal (same day) funds to an account at a bank specified by the Company payable to the order of the Company for the Firm Stock sold by them all at the offices of Goodwin Procter LLP, 620 Eighth Avenue, New York, NY 10018. Time shall be of the essence, and delivery at the time and place specified pursuant to this Agreement is a further condition of the obligations of each Underwriter hereunder. The time and date of the delivery and closing shall be at 9:00 A.M., New York time, on May 27, 2020, in accordance with Rule 15c6-1 of the Exchange Act. The time and date of such payment and delivery are herein referred to as the “**Closing Date**”. The Closing Date and the location of delivery of, and the form of payment for, the Firm Stock may be varied by agreement between the Company and the Representatives.

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

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

The Company will deliver the Optional Stock to the Representatives for the respective accounts of the several Underwriters through the facilities of The Depository Trust Company, issued in such names and in such denominations as the Representatives may direct by notice in writing to the Company given at or prior to 12:00 Noon, New York time, on the second (2nd) full business day preceding the Option Closing Date against payment of the aggregate Purchase Price therefor by wire transfer in federal (same day) funds to an account at a bank specified by the Company payable to the order of the Company for the Optional Stock sold by them, all at the offices of Goodwin Procter LLP, 620 Eighth Avenue, New York, NY 10018. Time shall be of the essence, and delivery at the time and place specified pursuant to this Agreement is a further condition of the obligations of each Underwriter hereunder. The Option Closing Date and the location of delivery of, and the form of payment for, the Optional Stock may be varied by agreement between the Company and the Representatives.

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

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

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

(b) The Company represents and agrees that, unless it obtains the prior consent of the Representatives, and each Underwriter represents and agrees that, unless it obtains the prior consent of the Company and the Representatives, it has not made and will not make any offer relating to the Stock that would constitute a "free writing prospectus" as defined in Rule 405 under the Securities Act unless the prior written consent of the Representatives has been received; *provided* that the prior written consent of the Representatives hereto shall be deemed to have been given in respect of the free writing prospectuses included in Schedule B hereto. The Company represents that it has treated and agrees that it will comply with the requirements of Rules 164 and 433 under the Securities Act applicable to any free writing prospectus, including the requirements relating to timely filing with the Commission, legending and record keeping and will not take any action that would result in an Underwriter or the Company being required to file with the Commission pursuant to Rule 433(d) 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.

(c) [Reserved]

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

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

(f) If at any time following issuance of a free writing prospectus there occurred or occurs an event or development as a result of which such free writing prospectus conflicted or will conflict with the information contained in the Registration Statement, Time of Sale Disclosure Package or Prospectus, including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof and not superseded or modified or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances prevailing at the subsequent time, not misleading, the Company has promptly notified or will promptly notify the Representatives so that any use of the free writing prospectus may cease until it is amended or supplemented and has promptly amended or will promptly amend or supplement, at its own expense, such free writing prospectus to eliminate or correct such conflict, untrue statement or omission. The foregoing sentence does not apply to statements in or omissions

from any free writing prospectus in reliance upon, and in conformity with, written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for inclusion therein, which information the parties hereto agree is limited to the Underwriters' Information (as defined in [Section 17](#)).

(g) Upon the request of the Representatives, to furnish promptly to the Representatives and to counsel for the Underwriters a signed copy of the Registration Statement as originally filed with the Commission, and of each amendment thereto filed with the Commission, including all consents and exhibits filed therewith.

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

(i) To make generally available to its stockholders as soon as practicable, but in any event not later than sixteen (16) months after the effective date of the Registration Statement (as defined in Rule 158(c) under the Securities Act), an earnings statement of the Company and its subsidiaries (which need not be audited) complying with Section 11(a) of the Securities Act (including, at the option of the Company, Rule 158).

(j) To take promptly from time to time such actions as the Representatives may reasonably request to qualify the Stock for offering and sale under the securities or Blue Sky laws of such jurisdictions (domestic or foreign) as the Representatives may designate and to continue such qualifications in effect, and to comply with such laws, for so long as required to permit the offer and sale of Stock in such jurisdictions; *provided* that the Company and its subsidiaries shall not be obligated to qualify as foreign corporations in any jurisdiction in which they are not so qualified or to file a general consent to service of process in any jurisdiction.

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

(l) During the period commencing on and including the date hereof and ending on and including the 60th day following the date of this Agreement (as the same may be extended as described below, the "**Lock-Up Period**"), the Company will not, without the prior written consent of the Representatives (which consent may be withheld at their sole discretion), directly or indirectly, sell (including, without limitation, any short sale), offer, contract or grant any option to sell, pledge, transfer or establish an open "put equivalent position" within the meaning of Rule 16a-1(h) under

the Exchange Act, or otherwise dispose of or transfer, or announce the offering of, or file any registration statement under the Securities Act in respect of, any Common Stock, options, rights or warrants to acquire Common Stock or securities exchangeable or exercisable for or convertible into Common Stock (other than as contemplated by this Agreement with respect to the Stock) or publicly announce the intention to do any of the foregoing; provided, however, that the Company may (i) issue Common Stock and options to purchase shares of Common Stock, shares of Common Stock underlying options granted and other securities, each pursuant to any director or employee stock option plan, stock ownership plan or dividend reinvestment plan of the Company in effect on the date hereof and described in the Time of Sale Disclosure Package; (ii) issue Common Stock pursuant to the conversion of securities or the exercise of warrants, which securities or warrants are outstanding on the date hereof and described in the Time of Sale Disclosure Package; (iii) adopt a new equity incentive plan, and file a registration statement on Form S-8 under the Securities Act to register the offer and sale of securities to be issued pursuant to such new equity incentive plan, and issue securities pursuant to such new equity incentive plan (including, without limitation, the issuance of shares of Common Stock upon the exercise of options or other securities issued pursuant to such new equity incentive plan), provided that (1) such new equity incentive plan satisfies the transaction requirements of General Instruction A.1 of Form S-8 under the Securities Act and (2) this clause (iii) shall not be available unless each recipient of shares of Common Stock, or securities exchangeable or exercisable for or convertible into Common Stock, pursuant to such new equity incentive plan shall be contractually prohibited from selling, offering, disposing of or otherwise transferring any such shares or securities during the remainder of the Lock-Up Period; or (iv) issue Common Stock to one or more counterparties in connection with the consummation, by the Company, of one or more strategic partnerships, joint ventures, collaborations or acquisitions or licenses of any business products or technology, provided that (1) the aggregate number of shares of Common Stock that may be issued pursuant to this clause (iv) shall not exceed five percent (5%) of the number of shares of Common Stock outstanding immediately after the closing of the sale of the Stock to the Underwriters pursuant to this Agreement, and (2) this clause (iv) shall not be available unless each recipient of such Common Stock shall have, prior to, or concurrently with, the entry of a definitive agreement in connection with the applicable partnership, joint venture, collaboration, acquisition or license, agreed in writing not to sell, offer, dispose of or otherwise transfer any such Common Stock (or engage in any short sales of Common Stock prior to the issuance of such Common Stock) during the remainder, if any, of the Lock-Up Period without the prior written consent of the Representatives (which consent may be withheld at the sole discretion of the Representatives). In addition, notwithstanding anything to the contrary contained in this Section 4(l), the Company shall be permitted to keep in effect the Sales Agreement, dated November 3, 2017, by and between the Company and Cowen (the "**Cowen Agreement**") and file a prospectus supplement to the base prospectus included in the registration statement on Form S-3 (File No. 333-219781); *provided, however*, no sales of Common Stock under the Cowen Agreement shall be made during the 60-day Lock-Up Period.

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

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

- (o) Prior to the Closing Date, other than Stock purchased in connection with the offering contemplated by this Agreement, the Company will not, and will use its reasonable best efforts to cause its affiliated purchasers (as defined in Regulation M under the Exchange Act) not to, either alone or with one or more other persons, bid for or purchase, for any account in which it or any of its affiliated purchasers has a beneficial interest, any Stock, or attempt to induce any person to purchase any Stock; and not to, and to use its reasonable best efforts to cause its affiliated purchasers not to, make bids or purchase for the purpose of creating actual, or apparent, active trading in or of raising the price of the Stock.
- (p) To maintain, at its expense, a registrar and transfer agent for the Stock.
- (q) To apply the net proceeds from the sale of the Stock as set forth in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus under the heading "Use of Proceeds," and except as disclosed in the Time of Sale Disclosure Package, the Company does not intend to use any of the proceeds from the sale of the Stock hereunder to repay any outstanding debt owed to any affiliate of any Underwriter. The Company shall manage its affairs and investments in such a manner as not to be or become an "investment company" within the meaning of the Investment Company Act and the rules and regulations thereunder.
- (r) To pay the required Commission filing fees relating to the Stock within the time required by Rule 456(b)(1) of the Rules and Regulations without regard to the proviso therein and otherwise in accordance with Rules 456(b) and 457(r) of the Rules and Regulations.
- (s) To use its reasonable best efforts to list, subject to notice of issuance, and to maintain the listing of the Stock on the Nasdaq Capital Market or another national securities exchange.
- (t) To use its reasonable efforts to do and perform all things required to be done or performed under this Agreement by the Company prior to each Closing Date and to satisfy all conditions precedent to the delivery of the Firm Stock and the Optional Stock.

5. *PAYMENT OF EXPENSES.* The Company agrees to pay, or reimburse if paid by any Underwriter, whether or not the transactions contemplated hereby are consummated or this Agreement is terminated: (a) the costs incident to the authorization, issuance, sale, preparation and delivery of the Stock and any taxes payable in that connection; (b) the costs incident to the registration of the Stock under the Securities Act; (c) the costs incident to the preparation, printing and distribution of the Registration Statement, the Base Prospectus, any Preliminary Prospectus, any free writing prospectus, the Time of Sale Disclosure Package, the Prospectus, any amendments, supplements and exhibits thereto or any document incorporated by reference therein and the costs of printing, reproducing and distributing this Agreement and any closing documents by mail, telex or other means of communications; (d) the fees and expenses (including related fees and expenses of counsel for the Underwriters) incurred in connection with securing any required review by FINRA of the terms of the sale of the Stock and any filings made with FINRA in connection with the transactions contemplated herein (not to exceed \$5,000 in the aggregate); (e) any applicable listing or other fees; (f) the fees and expenses (including related fees and expenses of counsel to the Underwriters) of qualifying the Stock under the securities laws of the several jurisdictions as provided in Section 4(j)) and of preparing, printing and distributing wrappers, and Blue Sky Memoranda (not to exceed \$10,000 in the aggregate); (g) the cost of preparing and printing stock certificates; (h) all fees and expenses of the registrar and transfer agent of the Stock; (i) the costs and expenses of the Company relating to investor presentations on any "road show" undertaken in connection with the marketing of the offering of the Stock, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the officers of the Company and such consultants, including the cost of any aircraft chartered in connection with the road show, and (j) all other costs and expenses incident to the offering of the Stock or the performance of the obligations of the Company under this Agreement (including, without limitation, the fees and expenses of the Company's counsel and the Company's

independent accountants; *provided* that, except to the extent otherwise provided in this Section 5 and in Sections 9 and 10 hereof, the Underwriters shall pay their own costs and expenses, including the fees and expenses of their counsel, any transfer taxes on the resale of any Stock by them and the expenses of advertising any offering of the Stock made by the Underwriters.

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

(a) The Registration Statement has become effective under the Securities Act, and no stop order suspending the effectiveness of the Registration Statement or any part thereof, preventing or suspending the use of any Base Prospectus, any Preliminary Prospectus, any free writing prospectus, the Time of Sale Disclosure Package, the Prospectus or any part thereof shall have been issued and no proceedings for that purpose or pursuant to Section 8A under the Securities Act shall have been initiated or threatened by the Commission and no notice of objection of the Commission to the use of the Registration Statement or any post-effective amendment thereto pursuant to Rule 401(g)(2) of the Rules and Regulations shall have been received, and all requests for additional information on the part of the Commission (to be included or incorporated by reference in the Registration Statement or the Prospectus or otherwise) shall have been complied with to the reasonable satisfaction of the Representatives; the Rule 462(b) Registration Statement, if any, any Preliminary Prospectus, each free writing prospectus and the Prospectus shall have been filed with the Commission within the applicable time period prescribed for such filing by, and in compliance with, the Securities Act and in accordance with Section 4(a), and the Rule 462(b) Registration Statement, if any, shall have become effective immediately upon its filing with the Commission; and FINRA shall have raised no objection to the fairness and reasonableness of the terms of this Agreement or the transactions contemplated hereby.

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

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

(d) On each Closing Date, the Representatives shall have received the opinion letter and negative assurance letter of Cooley LLP, counsel for the Company, dated as of such date, in form and substance reasonably satisfactory to the Representatives.

- (e) On each Closing Date, the Representatives shall have received the certificate of the Senior Vice President, Chief Financial Officer and Chief Business Officer of the Company, dated as of such date, in form and substance reasonably satisfactory to the Representatives.
- (f) On each Closing Date the Representatives shall have received the opinion and negative assurance letter of Goodwin Procter LLP, counsel for the Underwriters in connection with the offer and sale of the Stock, in form and substance satisfactory to the Underwriters, dated as of such date.
- (g) At the time of the execution of this Agreement, the Representatives shall have received from Ernst & Young LLP a letter, addressed to the Underwriters, executed and dated such date, in form and substance satisfactory to the Representatives (i) confirming that they are an independent registered accounting firm with respect to the Company and its subsidiaries within the meaning of the Securities Act and the rules and regulations of the PCAOB and (ii) stating the conclusions and findings of such firm, of the type ordinarily included in accountants' "comfort letters" to underwriters, with respect to the financial statements and certain financial information contained or incorporated by reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus.
- (h) On the effective date of any post-effective amendment to the Registration Statement and on each Closing Date, the Representatives shall have received a letter (the "**bring-down letter**") from Ernst & Young LLP addressed to the Underwriters and dated such Closing Date confirming, as of the date of the bring-down letter (or, with respect to matters involving changes or developments since the respective dates as of which specified financial information is given in the Time of Sale Disclosure Package and the Prospectus, as the case may be, as of a date not more than three (3) business days prior to the date of the bring-down letter), the conclusions and findings of such firm, of the type ordinarily included in accountants' "comfort letters" to underwriters, with respect to the financial information and other matters covered by its letter delivered to the Representatives concurrently with the execution of this Agreement pursuant to paragraph (f) of this [Section 6](#).
- (i) The Company shall have furnished to the Representatives a certificate, dated such Closing Date, of its Chief Executive Officer stating on behalf of the Company, that (i) no stop order suspending the effectiveness of the Registration Statement (including, for avoidance of doubt, any Rule 462(b) Registration Statement), or any post-effective amendment thereto, shall be in effect and no proceedings for such purpose shall have been instituted or, to their knowledge, threatened by the Commission, (ii) for the period from and including the date of this Agreement through and including such date, there has not occurred any Material Adverse Change, (iii) the representations, warranties and covenants of the Company set forth in [Section 2](#) of this Agreement are true and correct with the same force and effect as though expressly made on and as of such date, and (iv) 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.
- (j) Since the date of the latest audited financial statements included in the Time of Sale Disclosure Package or incorporated by reference in the Time of Sale Disclosure Package as of the date hereof, (i) neither the Company nor any of its subsidiaries shall have sustained any loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, otherwise than as set forth in the Time of Sale Disclosure Package, and (ii) there shall not have been any change in the capital stock or long-term debt of the Company or any of its subsidiaries, or any change, or any development involving a prospective change, in or affecting the business, general affairs, management, financial position, stockholders' equity or results of operations of the Company and its subsidiaries, otherwise than as set forth in the Time of Sale Disclosure Package, the effect of which, in any such case described in clause (i) or (ii) of this paragraph (j), is, in the judgment of the Representatives, so material and adverse as to make it impracticable or inadvisable to proceed with the sale or delivery of the Stock on the terms and in the manner contemplated in the Time of Sale Disclosure Package.

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

(l) Subsequent to the execution and delivery of this Agreement (i) no downgrading shall have occurred in the Company's corporate credit rating or the rating accorded the Company's debt securities by any "nationally recognized statistical rating organization," as that term is defined by the Commission for purposes of Rule 436(g)(2) under the Securities Act and (ii) no such organization shall have publicly announced that it has under surveillance or review (other than an announcement with positive implications of a possible upgrading), the Company's corporate credit rating or the rating of any of the Company's debt securities.

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

(n) The Company shall have filed a Notification: Listing of Additional Shares with the Nasdaq Capital Market and shall have received no objection thereto from the Nasdaq Capital Market.

(o) The Representatives shall have received on and as of such Closing Date satisfactory evidence of the good standing of the Company in its jurisdiction of incorporation and its good standing as foreign entities in such other jurisdictions as the Representatives may reasonably request, in each case in writing or any standard form of telecommunication from the appropriate authorities of such jurisdictions.

(p) The Representatives shall have received the written agreements, substantially in the form of Exhibit I hereto, of the executive officers and directors of the Company listed in Schedule D to this Agreement.

(q) The Company shall have furnished to the Representatives a certificate, dated such Closing Date, of its Secretary.

(r) On or prior to such Closing Date, the Company shall have furnished to the Representatives such further certificates and documents as the Representatives may reasonably request and are customary for the type of offering contemplated by this Agreement.

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

7. *INDEMNIFICATION AND CONTRIBUTION.*

(a) The Company shall indemnify and hold harmless each Underwriter, its affiliates, directors, officers, managers, members, employees, representatives and agents and each person, if any, who controls any Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the “**Underwriter Indemnified Parties**,” and each an “**Underwriter Indemnified Party**”) against any loss, claim, damage, expense or liability whatsoever (or any action, investigation or proceeding in respect thereof), joint or several, to which such Underwriter Indemnified Party may become subject, under the Securities Act or otherwise, insofar as such loss, claim, damage, expense, liability, action, investigation or proceeding arises out of or is based upon (A) any untrue statement or alleged untrue statement of a material fact contained in any Preliminary Prospectus, any free writing prospectus, the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein or (B) the omission or alleged omission to state in any Preliminary Prospectus, any free writing prospectus, the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein, a material fact required to be stated therein or necessary to make the statements therein not misleading, and shall reimburse each Underwriter Indemnified Party promptly upon demand for any legal fees or other expenses reasonably incurred by that Underwriter Indemnified Party in connection with investigating, or preparing to defend, or defending against, or appearing as a third party witness in respect of, or otherwise incurred in connection with, any such loss, claim, damage, expense, liability, action, investigation or proceeding, as such fees and expenses are incurred; *provided, however*, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, expense or liability arises out of or is based upon an untrue statement or alleged untrue statement in, or omission or alleged omission from any Preliminary Prospectus, any free writing prospectus, the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein made in reliance upon and in conformity with written information furnished to the Company through the Representatives by or on behalf of any Underwriter specifically for use therein, which information the parties hereto agree is limited to the Underwriter’s Information (as defined in Section 17).

The indemnity agreement in this Section 7(a) is not exclusive and is in addition to each other liability which the Company might have under this Agreement or otherwise, and shall not limit any rights or remedies which may otherwise be available under this Agreement, at law or in equity to any Underwriter Indemnified Party.

(b) Each Underwriter, severally and not jointly, shall indemnify and hold harmless the Company and its directors, its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the “**Company Indemnified Parties**” and each a “**Company Indemnified Party**”) against any loss, claim, damage, expense or liability whatsoever (or any action, investigation or proceeding in respect thereof), joint or several, to which such Company Indemnified Party may become subject, under the Securities Act or otherwise, insofar as such loss, claim, damage, expense, liability, action, investigation or proceeding arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in any Preliminary

Prospectus, any free writing prospectus, the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein, or (ii) the omission or alleged omission to state in any Preliminary Prospectus, any free writing prospectus, the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein, a material fact required to be stated therein or necessary to make the statements therein not misleading, but in each case only to the extent that the untrue statement or alleged untrue statement or omission or alleged omission was made in reliance upon and in conformity with written information furnished to the Company through the Representatives by or on behalf of that Underwriter specifically for use therein, which information the parties hereto agree is limited to the Underwriter's Information as defined in Section 17, and shall reimburse the Company Indemnified Parties for any legal or other expenses reasonably incurred by such party in connection with investigating or preparing to defend or defending against or appearing as third party witness in connection with any such loss, claim, damage, liability, action, investigation or proceeding, as such fees and expenses are incurred. This indemnity agreement is not exclusive and will be in addition to any liability which the Underwriters might otherwise have and shall not limit any rights or remedies which may otherwise be available under this Agreement, at law or in equity to the Company Indemnified Parties.

(c) Promptly after receipt by an indemnified party under this Section 7 of notice of the commencement of any action, the indemnified party shall, if a claim in respect thereof is to be made against an indemnifying party under this Section 7, notify such indemnifying party in writing of the commencement of that action; *provided, however*, that the failure to notify the indemnifying party shall not relieve it from any liability which it may have under this Section 7 except to the extent it has been materially prejudiced by such failure; and, *provided, further*, that the failure to notify an indemnifying party shall not relieve it from any liability which it may have to an indemnified party otherwise than under this Section 7. If any such action shall be brought against an indemnified party, and it shall notify the indemnifying party thereof, the indemnifying party shall be entitled to participate therein and, to the extent that it wishes, jointly with any other similarly notified indemnifying party, to assume the defense of such action with counsel reasonably satisfactory to the indemnified party (which counsel shall not, except with the written consent of the indemnified party, be counsel to the indemnifying party). After notice from the indemnifying party to the indemnified party of its election to assume the defense of such action, except as provided herein, the indemnifying party shall not be liable to the indemnified party under Section 7 for any legal or other expenses subsequently incurred by the indemnified party in connection with the defense of such action other than reasonable costs of investigation; *provided, however*, that any indemnified party shall have the right to employ separate counsel in any such action and to participate in the defense of such action but the fees and expenses of such counsel (other than reasonable costs of investigation) shall be at the expense of such indemnified party unless (i) the employment thereof has been specifically authorized in writing by the Company in the case of a claim for indemnification under Section 7(a) or the Representatives in the case of a claim for indemnification under Section 7(b), (ii) such indemnified party shall have been advised by its counsel that there may be one or more legal defenses available to it which are different from or additional to those available to the indemnifying party, or (iii) the indemnifying party has failed to assume the defense of such action and employ counsel reasonably satisfactory to the indemnified party within a reasonable period of time after notice of the commencement of the action or the indemnifying party does not diligently defend the action after assumption of the defense, in which case, if such indemnified party notifies the indemnifying party in writing that it elects to employ separate counsel at the expense of the indemnifying party, the indemnifying party shall not have the right to assume the defense of (or, in the case of a failure to diligently defend the action after assumption of the defense, to continue to defend) such action on behalf of such indemnified party and the indemnifying party shall be responsible for legal or other expenses subsequently incurred by such indemnified party in

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

(d) If the indemnification provided for in this Section 7 is unavailable or insufficient to hold harmless an indemnified party under Section 7(a) or 7(b), then each indemnifying party shall, in lieu of indemnifying such indemnified party, contribute to the amount paid, payable or otherwise incurred by such indemnified party as a result of such loss, claim, damage, expense or liability (or any action, investigation or proceeding in respect thereof), as incurred, (i) in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters on the other from the offering of the Stock, or (ii) if the allocation provided by clause (i) of this Section 7(d) is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) of this Section 7(d) but also the relative fault of the Company on the one hand and the Underwriters on the other with respect to the statements, omissions, acts or failures to act which resulted in such loss, claim, damage, expense or liability (or any action, investigation or proceeding in respect thereof) as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriters on the other with respect to such offering shall be deemed to be in the same proportion as the total net proceeds from the offering of the Stock purchased under this Agreement (before deducting expenses) received by the Company bear to the total underwriting discounts and

commissions received by the Underwriters with respect to the Stock purchased under this Agreement, in each case as set forth in the table on the cover page of the Prospectus. The relative fault of the Company on the one hand and the Underwriters on the other shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company on the one hand or the Underwriters on the other, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such untrue statement, omission, act or failure to act; *provided* that the parties hereto agree that the written information furnished to the Company through the Representatives by or on behalf of the Underwriters for use in any Preliminary Prospectus, any free writing prospectus, the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, or in any amendment or supplement thereto or document incorporated by reference therein, consists solely of the Underwriter's Information as defined in Section 17.

(e) The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to Section 7(d) above were to be determined by pro rata allocation or by any other method of allocation which does not take into account the equitable considerations referred to Section 7(d) above. The amount paid or payable by an indemnified party as a result of the loss, claim, damage, expense, liability, action, investigation or proceeding referred to in Section 7(d) above shall be deemed to include, subject to the limitations set forth above, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating, preparing to defend or defending against or appearing as a third party witness in respect of, or otherwise incurred in connection with, any such loss, claim, damage, expense, liability, action, investigation or proceeding. Notwithstanding the provisions of this Section 7, no Underwriters shall be required to contribute any amount in excess of the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the Stock exceeds the amount of any damages which the Underwriter has otherwise paid or become liable to pay by reason of any untrue or alleged untrue statement, omission or alleged omission, act or alleged act or failure to act or alleged failure to act. No Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation. The Underwriters' obligations to contribute as provided in this Section 7 are several in proportion to their respective underwriting obligations and not joint.

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

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

Underwriter on account of expenses to the extent incurred by such defaulting Underwriter, provided that the foregoing shall not limit any reimbursement obligation of the Company to any non-defaulting Underwriter under this Section 9.

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

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

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

- (a) each Underwriter's responsibility to the Company is solely contractual in nature, the Representatives have been retained solely to act as underwriters in connection with the sale of the Stock and no fiduciary, advisory or agency relationship between the Company and the Representatives has been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether the Representatives have advised or are advising the Company on other matters;
- (b) the price of the Stock set forth in this Agreement was established by the Company following discussions and arms-length negotiations with the Representatives, and the Company is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;
- (c) it has been advised that the Representatives and their affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Representatives have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; and
- (d) it waives, to the fullest extent permitted by law, any claims it may have against the Representatives for breach of fiduciary duty or alleged breach of fiduciary duty and agrees that the Representatives shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on behalf of or in right of the Company, including stockholders, employees or creditors of the Company.

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

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

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

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

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

For purposes of this Section 14, (a) “**affiliate**” has the meaning set forth in Rule 405 under the Securities Act, (b) “**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), (c) “**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), (d) “**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 (e) “**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.

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

(a) if to the Underwriters, shall be delivered or sent by mail, telex, facsimile transmission or email to the Representatives: c/o Cowen and Company, LLC, 599 Lexington Avenue, New York, New York 10022, Attention: Brad Friedman; c/o Evercore Group L.L.C., 55 East 52nd Street, New York, New York 10055, Attention: Kenneth A. Masotti, Esq.; and c/o William Blair & Company, L.L.C., Attention: Equity Capital Markets, 150 North Riverside Plaza, Chicago, Illinois 60606; and

(b) if to the Company shall be delivered or sent by mail, telex, facsimile transmission or email to Dynavax Technologies Corporation Attention: General Counsel, Fax: (510) 848-1376;

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

15. **DEFINITION OF CERTAIN TERMS.** For purposes of this Agreement, (a) “**business day**” means any day on which the Nasdaq Capital Market is open for trading and (b) “**subsidiary**” has the meaning set forth in Rule 405 under the Securities Act.

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

17. **UNDERWRITERS' INFORMATION.** The parties hereto acknowledge and agree that, for all purposes of this Agreement, the Underwriters' Information consists solely of the following information in the Prospectus: the statements concerning the Underwriters contained in the fourth, seventh, ninth through eleventh and twenty-seventh paragraphs under the heading “Underwriting.”

18. **AUTHORITY OF THE REPRESENTATIVES.** In connection with this Agreement, each of Cowen, Evercore and William Blair & Company, L.L.C. will act for and on behalf of the several Underwriters, and any action taken under this Agreement by the Representatives, will be binding on all the Underwriters.

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

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

21. *COUNTERPARTS.* This Agreement may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument.

[signature page follows]

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

Very truly yours,

DYNAVAX TECHNOLOGIES CORPORATION

By: /s/ Michael Ostrach

Name: Michael Ostrach

Title: Senior Vice President, Chief Financial
Officer and Chief Business Officer

Accepted as of the
date first above written:

COWEN AND COMPANY, LLC

Acting on its own behalf and as Representative of the
several Underwriters referred to in the foregoing
Agreement.

COWEN AND COMPANY, LLC

By: /s/ Mariel A. Healy

Name: Mariel A. Healy

Title: Managing Director

EVERCORE GROUP, L.L.C.

Acting on its own behalf and as Representative of the
several Underwriters referred to in the foregoing
Agreement.

EVERCORE GROUP, L.L.C.

By: /s/ Gloria Tang

Name: Gloria Tang

Title: Vice President

WILLIAM BLAIR & COMPANY, L.L.C.

Acting on its own behalf and as Representative of the
several Underwriters referred to in the foregoing
Agreement.

WILLIAM BLAIR & COMPANY, L.L.C.

By: /s/ Steve Maletzky

Name: Steve Maletzky

Title: Partner, Head of Equity Capital Markets

SCHEDULE A

<u>Name</u>	<u>Number of Shares of Common Stock to be Purchased</u>	<u>Number of Shares of Optional Stock to be Purchased</u>
Cowen and Company, LLC	5,600,000	840,000
Evercore Group, L.L.C.	4,550,000	682,500
William Blair & Company, L.L.C.	3,150,000	472,500
H.C. Wainwright & Co., LLC	700,000	105,000
Total	14,000,000	2,100,000

SCHEDULE B

None.

SCHEDULE C

Public Offering Price: \$5.00 per share

Number of Shares of Firm Stock: 14,000,000 shares

Number of Shares of Optional Stock: 2,100,000 shares

Underwriting Discount: 6.0%

SCHEDULE D

Francis R. Cano
Andrew Hack
Robert Janssen
Dan Kisner
David Novack
Arnold Oronsky
Michael Ostrach
Peggy Phillips
Natale Ricciardi
Ryan Spencer

Exhibit I

Form of Lock-Up Agreement

May , 2020

COWEN AND COMPANY, LLC
EVERCORE GROUP L.L.C.
WILLIAM BLAIR & COMPANY, L.L.C.
As Representatives of the several Underwriters

c/o COWEN AND COMPANY, LLC
599 Lexington Avenue, 27th Floor
New York, NY 10022

c/o EVERCORE GROUP L.L.C.
55 East 52nd Street
New York, New York 10055

c/o WILLIAM BLAIR & COMPANY, L.L.C.
150 North Riverside Plaza
Chicago, Illinois 60606

Re: Dynavax Technologies Corporation

Ladies and Gentlemen:

This Agreement is being delivered to you in connection with the proposed Underwriting Agreements (the “Underwriting Agreements”) between Dynavax Technologies Corporation, a Delaware corporation (the “Company”), and Cowen and Company, LLC (“Cowen”), Evercore Group L.L.C. (“Evercore”) and William Blair & Company, L.L.C. as representatives of a group of underwriters (collectively, the “Underwriters”), to be named therein, relating to the proposed public offering (the “Offering”) of (a) shares of common stock, par value \$0.001 per share (the “Common Stock”) and (b) shares of Series D Preferred Stock, par value \$0.001 per share (the “Preferred Stock”) (collectively, with the Common Stock, the “Securities”), of the Company.

In order to induce you and the other Underwriters to enter into the Underwriting Agreements, and in light of the benefits that the Offering of the Securities will confer upon the undersigned in its capacity as a securityholder and/or an officer, director or employee of the Company, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned agrees with each Underwriter that, during the period beginning on the date hereof through and including the date that is the 60th day after the date of the Underwriting Agreements (the “Lock-Up Period”), the undersigned will not, without the prior written consent of Cowen and Evercore, directly or indirectly, (i) offer, sell, assign, transfer, pledge, contract to sell, or otherwise dispose of, or announce the intention to otherwise dispose of, any shares of Common Stock (including, without limitation, Common Stock which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations promulgated under the Securities Act of 1933, as amended (the “Securities Act”) (such shares, the “Beneficially Owned Shares”)) or securities convertible into or exercisable or exchangeable for Common Stock, (ii) enter into any swap, hedge or similar agreement or arrangement that transfers in whole or in part, the economic risk of ownership of the Beneficially Owned Shares or securities convertible into or exercisable or exchangeable for Common Stock, whether now owned or hereafter acquired by the undersigned or with respect to which the undersigned has or hereafter acquires the power of disposition, or (iii) engage in any short selling of the Common Stock or securities convertible into or exercisable or exchangeable for Common Stock.

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

(1) any transfers made by the undersigned (a) as a bona fide gift to any member of the immediate family (as defined below) of the undersigned or to a trust the beneficiaries of which are exclusively the undersigned or members of the undersigned’s immediate family, (b) by will or intestate succession upon the death of the undersigned or (c) as a bona fide gift to a charity or educational institution,

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

(3) the entry, by the undersigned, at any time on or after the date of the Underwriting Agreements, of any trading plan providing for the sale of Common Stock by the undersigned, which trading plan meets the requirements of Rule 10b5-1(c) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and does not provide for, or permit, the sale of any Common Stock during the Lock-up Period;

(4) any transfers made by the undersigned to the Company to satisfy tax withholding obligations pursuant to the Company's equity incentive plans or arrangements disclosed in the Prospectus (as defined in the Underwriting Agreements);

(5) any transfers made by the undersigned to the Company in connection with the repurchase of shares of Common Stock or other securities convertible into or exercisable or exchangeable for Common Stock as required by the terms of (i) any equity incentive plans disclosed in the Prospectus or (ii) any agreements pursuant to which such shares of Common Stock were issued; and

(6) any transfer pursuant to a trading plan established pursuant to Rule 10b5-1(c) under the Exchange Act prior to the date hereof;

provided, however, that (i) in the case of any transfer described in clause (1) above, it shall be a condition to the transfer that the transferee executes and delivers to Cowen and Evercore, acting on behalf of the Underwriters, not later than one business day prior to such transfer, a written agreement, in substantially the form of this Agreement (it being understood that any references to "immediate family" in the agreement executed by such transferee shall expressly refer only to the immediate family of the undersigned and not to the immediate family of the transferee) and otherwise satisfactory in form and substance to Cowen and Evercore, and (ii) in the case of any transfer described in clause (1), (4),(5) or (6) above, if the undersigned is required to file a report under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock or Beneficially Owned Shares or any securities convertible into or exercisable or exchangeable for Common Stock or Beneficially Owned Shares during the Lock-Up Period (as the same may be extended as described above), the undersigned shall include a statement in such report to the effect that, (A) in the case of any transfer pursuant to clause (1) above, such transfer is being made as a gift or by will or intestate succession, (B) in the case of any transfer pursuant to clause (4) above, such transfer is being made to satisfy tax withholding obligations, (C) in the case of any transfer pursuant to clause (5) above, such transfer is being made as required by the applicable plan or agreement, and (D) in the case of any transfer pursuant to clause (6) above, such transfer is being made pursuant to a trading plan established pursuant to Rule 10b5-1 under the Exchange Act. For purposes of this paragraph, "immediate family" shall mean a spouse, domestic partner, child, grandchild or other lineal descendant (including by adoption), father, mother, brother or sister of the undersigned.

For avoidance of doubt, nothing in this Agreement prohibits the undersigned from exercising any options or warrants to purchase Common Stock (which exercises may be effected on a cashless basis to the extent the instruments representing such options or warrants permit exercises on a cashless basis), it being understood that any Common Stock issued upon such exercises will be subject to the restrictions of this Agreement.

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

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

This Agreement and all authority herein conferred are irrevocable and shall survive the death or incapacity of the undersigned and shall be binding upon the heirs, personal representatives, successors and assigns of the undersigned.

If (i) the Company notifies Cowen and Evercore in writing that it does not intend to proceed with the Offering, (ii) the Underwriting Agreements are not executed by May 31, 2020, or (iii) the Underwriting Agreements (other than the provisions thereof which survive termination) shall terminate or be terminated for any reason

prior to payment for and delivery of any Securities to be sold thereunder, then this Agreement shall immediately be terminated and the undersigned shall automatically be released from all of his or her obligations under this Agreement. The undersigned acknowledges and agrees that whether or not any Offering of Securities actually occurs depends on a number of factors, including market conditions.

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.

Very truly yours,

Printed Name of Holder

(Signature)

Address:



Steven M. Przesmicki
+1 858 550 6070
przes@cooley.com

May 22, 2020

Dynavax Technologies Corporation
2100 Powell Street, Suite 900
Emeryville, CA 94608

Ladies and Gentlemen:

We have acted as counsel to Dynavax Technologies Corporation, a Delaware corporation (the "**Company**"), in connection with the issuance and sale by the Company of up to 16,100,000 shares (the "**Shares**") of common stock of the Company, par value \$0.001 per share, including up to 2,100,000 shares that may be sold pursuant to the exercise of an option to purchase additional Shares, pursuant to the Registration Statement on Form S-3 (No. 333-219781) (the "**Registration Statement**"), filed with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Act**"), the prospectus included in the Registration Statement (the "**Base Prospectus**"), and the related prospectus supplement dated May 21, 2020, filed with the Commission pursuant to Rule 424(b) under the Act (together with the Base Prospectus, the "**Prospectus**").

In connection with this opinion, we have examined and relied upon (a) the Registration Statement, (b) the Prospectus, (c) the Company's Sixth Amended Restated Certificate of Incorporation (as amended) and Amended and Restated Bylaws, each as currently in effect, and (e) originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness and authenticity of all documents submitted to us as originals, and the conformity to originals of all documents submitted to us as copies; the accuracy, completeness and authenticity of certificates of public officials; and the due execution and delivery of all documents other than by the Company where due execution and delivery are a prerequisite to the effectiveness thereof. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. We express no opinion as to whether the laws of any particular jurisdiction are applicable to the subject matter hereof. We are not rendering any opinion as to compliance with any federal or state rule or regulation relating to securities, or to the sale or issuance thereof.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when sold in accordance with the Registration Statement and the Prospectus, will be validly issued, fully paid and nonassessable.

We consent to the reference to our firm under the caption "Legal Matters" in the Prospectus included in the Registration Statement and to the filing of this opinion as an exhibit to a current report of the Company on Form 8-K for incorporation by reference into the Registration Statement.

COOLEY LLP 4401 EASTGATE MALL SAN DIEGO, CA 92121
T: (858) 550-6000 F: (858) 550-6420 COOLEY.COM



Dynavax Technologies Corporation

May 22, 2020

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Sincerely,

Cooley LLP

By: /s/ Steven M. Przesmicki

Steven M. Przesmicki

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