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

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**FORM 8-K**

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

**Date of Report (Date of earliest event reported): March 16, 2018 (March 15, 2018)**

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**VANDA PHARMACEUTICALS INC.**  
(Exact Name of Registrant as Specified in Charter)

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

**001-34186**  
(Commission  
File Number)

**03-0491827**  
(IRS Employer  
Identification No.)

**2200 Pennsylvania Avenue NW  
Suite 300E  
Washington, DC**  
(Address of principal executive offices)

**20037**  
(Zip Code)

**Registrant's telephone number, including area code: (202) 734-3400**

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

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

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

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

Emerging growth company

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

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## ITEM 1.01. ENTRY INTO A MATERIAL DEFINITIVE AGREEMENT.

On March 15, 2018, Vanda Pharmaceuticals Inc. (the “Company”) entered into an underwriting agreement (the “Underwriting Agreement”) with Citigroup Global Markets Inc. and Jefferies LLC, as representatives of the several underwriters named therein (collectively, the “Underwriters”), relating to the public offering (the “Offering”) of 5,500,000 shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”) at an offering price to the public of \$17.00 per share (the “Offering Price”). Under the terms of the Underwriting Agreement the Company has also granted the Underwriters a 30-day option to purchase up to an additional 825,000 shares of Common Stock. The net proceeds to the Company from the sale of the Common Stock are expected to be approximately \$87.6 million, after deducting underwriting discounts and commissions and other estimated offering expenses payable by the Company, assuming no exercise by the Underwriters of their option to purchase additional shares. The offering is expected to close on or about March 20, 2018, subject to the satisfaction of customary closing conditions.

The Company intends to use the net proceeds from this offering for commercial, research and development activities and other general corporate purposes.

The Common Stock is being offered and sold pursuant to the Company’s effective shelf registration statement on Form S-3 and an accompanying prospectus (Registration Statement No. 333-205513) filed with the Securities and Exchange Commission (the “SEC”) on July 6, 2015 and declared effective by the SEC on July 21, 2015 and a preliminary and final prospectus supplement filed with the SEC in connection with the Company’s takedown relating to the offering. A copy of the opinion of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP relating to the legality of the issuance and sale of the Common Stock in the offering is attached as Exhibit 5.1 hereto.

The Underwriting Agreement contains customary representations, warranties and agreements by the Company, customary conditions to closing, indemnification obligations of the Company 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 the contracting parties, including being qualified by confidential disclosures exchanged between the parties in connection with the execution of the Underwriting Agreement.

The foregoing is only a brief description of the material terms of the Underwriting Agreement, does not purport to be a complete description of the rights and obligations of the parties thereunder and is qualified in its entirety by reference to the Underwriting Agreement that is filed as Exhibit 1.1 to this Current Report on Form 8-K and is incorporated by reference herein.

## ITEM 8.01. OTHER EVENTS

On March 15, 2018, the Company issued a press release announcing that it had priced the Offering. A copy of the press release is attached hereto as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

## ITEM 9.01. FINANCIAL STATEMENTS AND EXHIBITS.

### (d) Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
1.1	<a href="#"><u>Underwriting Agreement, dated March 15, 2018 by and among the Company, Citigroup Global Markets Inc. and Jefferies LLC, as representatives of the several underwriters named therein</u></a>
5.1	<a href="#"><u>Opinion of Gunderson Dettmer Stough Villeneuve Franklin &amp; Hachigian, LLP</u></a>
23.1	<a href="#"><u>Consent of Gunderson Dettmer Stough Villeneuve Franklin &amp; Hachigian, LLP (contained in Exhibit 5.1)</u></a>
99.1	<a href="#"><u>Press Release of Vanda Pharmaceuticals Inc., dated March 15, 2018</u></a>

**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.

**VANDA PHARMACEUTICALS INC.**

Dated: March 16, 2018

By: /s/ Richard L. Gulino

Richard L. Gulino

Senior Vice President, General Counsel

## VANDA PHARMACEUTICALS INC.

5,500,000 Shares <sup>1</sup>  
Common Stock  
(\$0.001 par value)

Underwriting Agreement

New York, New York  
March 15, 2018

To the Representatives  
named in Schedule I  
hereto of the several  
Underwriters named in  
Schedule II hereto

Ladies and Gentlemen:

Vanda Pharmaceuticals Inc., a corporation organized under the laws of Delaware (the “**Company**”), proposes to sell to the several underwriters named in Schedule II hereto (the “**Underwriters**”), for whom you (the “**Representatives**”) are acting as representatives, the number of shares of common stock, \$0.001 par value (“**Common Stock**”), of the Company set forth in Schedule I hereto (the “**Securities**”) (said shares to be issued and sold by the Company being hereinafter called the “**Underwritten Securities**”). The Company also proposes to grant to the Underwriters an option to purchase up to the number of additional shares of Common Stock set forth in Schedule I hereto (the “**Option Securities**”; the Option Securities, together with the Underwritten Securities, being hereinafter called the “**Securities**”). To the extent there are no additional Underwriters listed on Schedule II other than you, the term Representatives as used herein shall mean you, as Underwriters, and the terms Representatives and Underwriters shall mean either the singular or plural as the context requires. Any reference herein to the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Final Prospectus shall be deemed to refer to and include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 which were filed under the Exchange Act on or before the Effective Date of the Registration Statement or the issue date of the Base Prospectus, any Preliminary Prospectus or the Final Prospectus, as the case may be; and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, the Base Prospectus, any Preliminary Prospectus or the Final Prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act after the Effective Date of the Registration Statement or the issue date of the Base Prospectus, any Preliminary Prospectus or the Final Prospectus, as the case may be, deemed to be incorporated therein by reference. Certain terms used herein are defined in Section 20 hereof.

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<sup>1</sup> Plus an option to purchase from the Company, up to 825,000 additional Securities

1. Representations and Warranties. The Company represents and warrants to, and agrees with, each Underwriter as set forth below in this Section 1.

(a) Registration Statement and Prospectuses. The Company meets the requirements for use of Form S-3 under the Act and has prepared and filed with the Commission a registration statement (the file number of which is set forth in Schedule I hereto) on Form S-3, including a related Base Prospectus, for registration under the Act of the offering and sale of the Securities (the “**Offering**”). Such Registration Statement, including any amendments thereto filed prior to the Execution Time, has become effective. The Company may have filed with the Commission, as part of an amendment to the Registration Statement or pursuant to Rule 424(b), one or more preliminary prospectus supplements relating to the Securities, each of which has previously been furnished to you. The Company will file with the Commission a final prospectus supplement relating to the Securities in accordance with Rule 424(b). As filed, such final prospectus supplement shall contain all information required by the Act and the rules thereunder, and, except to the extent the Representatives shall agree in writing to a modification, shall be in all substantive respects in the form furnished to you prior to the Execution Time or, to the extent not completed at the Execution Time, shall contain only such specific additional information and other changes (beyond that contained in the Base Prospectus and any Preliminary Prospectus) as the Company has advised you, prior to the Execution Time, will be included or made therein. The Registration Statement, at the Execution Time, meets the requirements set forth in Rule 415(a)(1)(x). The initial Effective Date of the Registration Statement was not earlier than the date three years before the Execution Time.

(b) Accurate Disclosure (Registration Statement and Final Prospectus). On each Effective Date, the Registration Statement did, and when the Final Prospectus is first filed in accordance with Rule 424(b) and on the Closing Date (as defined herein) and on any date on which Option Securities are purchased, if such date is not the Closing Date (a “**settlement date**”), the Final Prospectus (and any supplement thereto) will, comply in all material respects with the applicable requirements of the Act and the rules thereunder; on each Effective Date, at the Execution Time and on the Closing Date, the Registration Statement did not and will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein not misleading; and on the date of any filing pursuant to Rule 424(b) and on the Closing Date and any settlement date, the Final Prospectus (together with any supplement thereto) will not include 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; provided, however, that the Company makes no representations or warranties as to the information contained in or omitted from the Registration Statement or the Final Prospectus (or any supplement thereto) in reliance upon and in conformity with information furnished in writing to the Company by or on behalf of any Underwriter through the Representatives or their legal counsel specifically for inclusion in the Registration Statement or the Final Prospectus (or any supplement thereto), it being understood and agreed that the only such information furnished by or on behalf of any Underwriter consists of the information described as such in Section 8 hereof.

(c) Accurate Disclosure (Disclosure Package and Road Show). (i) The Disclosure Package and the price to the public, the number of Underwritten Securities and the number of Option Securities to be included on the cover page of the Final Prospectus, when taken together as a whole, and (ii) each electronic road show, when taken together as a whole with the Disclosure Package and the price to the public, the number of Underwritten Securities and the number of Option Securities to be included on the cover page of the Final Prospectus does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The preceding sentence does not apply to statements in or omissions from the Disclosure Package based upon and in conformity with written information furnished to the Company by any Underwriter through the Representatives specifically for use therein, it being understood and agreed that the only such information furnished by or on behalf of any Underwriter consists of the information described as such in Section 8 hereof.

(d) Issuer Eligibility. (i) At the earliest time after the filing of the Registration Statement that the Company or another offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2)) of the Securities and (ii) as of the Execution Time (with such date being used as the determination date for purposes of this clause (ii)), the Company was not and is not an Ineligible Issuer (as defined in Rule 405), without taking account of any determination by the Commission pursuant to Rule 405 that it is not necessary that the Company be considered an Ineligible Issuer.

(e) Issuer Free Writing Prospectuses. Each Issuer Free Writing Prospectus does not include any information that conflicts with the information contained in the Registration Statement, including any document incorporated therein by reference and any prospectus supplement deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by any Underwriter through the Representatives specifically for use therein, it being understood and agreed that the only such information furnished by or on behalf of any Underwriter consists of the information described as such in Section 8 hereof.

(f) XBRL. The interactive data in the eXtensible Business Reporting Language (“**XBRL**”) included as an exhibit to the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

(g) Organization and Good Standing. The Company and each of its subsidiaries (as defined in Rule 405) have been duly organized and are validly existing as corporations or other legal entities in good standing (or the foreign equivalent thereof) under the laws of their respective jurisdictions of organization. The Company and each of its subsidiaries are duly qualified to do business and are in good standing as foreign corporations or other legal entities in each jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such qualification and have all power and authority (corporate or other) necessary to own or

hold their respective properties and to conduct the businesses in which they are engaged, except where the failure to so qualify or have such power or authority would not (i) have, singly or in the aggregate, a material adverse effect on the condition (financial or otherwise), results of operations, business or prospects of the Company and its subsidiaries taken as a whole, or (ii) impair in any material respect the ability of the Company to perform its obligations under this Agreement or to consummate any transactions contemplated by this Agreement, the Disclosure Package or the Final Prospectus (any such effect as described in clauses (i) or (ii), a “**Material Adverse Effect**”). The Company owns or controls, directly or indirectly, the following corporations, partnerships, limited partnerships, limited liability companies, associations or other entities: Vanda Pharmaceuticals Ltd., a company organized under the laws of the United Kingdom, Vanda Pharmaceuticals LLC, a company with limited liability organized under the laws of Switzerland (and with additional corporate names of Vanda Pharmaceuticals GmbH, Vanda Pharmaceuticals S.á r.l and Vanda Pharmaceuticals S.a g.l.) and Vanda Pharmaceuticals Germany GmbH, a company with limited liability organized under the laws of Germany.

(h) Corporate Power and Authority. The Company has the corporate power and authority to enter into this Agreement, and to perform and to discharge its obligations hereunder; and this Agreement has been duly authorized, executed and delivered by the Company, and constitutes a valid and binding obligation of the Company enforceable in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors’ rights generally and except as enforceability may be subject to general principles of equity (regardless of whether such enforceability is considered in a proceeding in equity or at law).

(i) The Securities. The Underwritten Securities and the Option Securities to be issued and sold by the Company to the Underwriters hereunder have been duly and validly authorized and, when issued and delivered by the Company against payment therefor as provided herein, will be duly and validly issued, fully paid and nonassessable and free of any preemptive rights, rights of first refusal, registration rights or similar rights and will conform to the description thereof contained in the Disclosure Package and the Final Prospectus.

(j) Capitalization.

(i) The Company has an authorized capitalization as set forth in the Base Prospectus, and all of the issued shares of capital stock of the Company have been duly and validly authorized and issued, are fully paid and non-assessable, have been issued in compliance with federal and state securities laws, and conform to the description thereof contained in the Disclosure Package and the Final Prospectus. As of February 1, 2018, there were 45,437,938 shares of Common Stock issued and outstanding and no shares of Preferred Stock, par value \$0.001 of the Company issued and outstanding, 4,452,984 shares of Common Stock were issuable upon the exercise of all options, warrants and convertible securities outstanding as of such date and 1,129,420 shares of Common Stock were

..issuable upon the vesting of restricted stock units outstanding as of such date. Since such date, the Company has not issued any securities, other than Common Stock of the Company issued pursuant to the exercise of stock options previously outstanding under the Company's stock plans or the issuance of options, restricted stock units or restricted Common Stock under the Company's stock plans. All of the stock options, warrants and other rights to purchase or exchange any securities for shares of the Company's capital stock have been duly authorized and validly issued, and were issued in compliance with U.S. federal and applicable state securities laws. None of the outstanding shares of Common Stock were issued in violation of any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. The description of the Company's stock option, stock bonus and other stock plans or arrangements, and the stock options or other rights granted thereunder, as described in the Disclosure Package and the Final Prospectus, accurately and fairly present the information required to be shown with respect to such plans, arrangements, stock options and rights.

(ii) All the outstanding shares of capital stock or other equity interests of each subsidiary of the Company have been duly authorized and validly issued, are fully paid and nonassessable and, except to the extent set forth in the Disclosure Package or the Final Prospectus, are owned by the Company directly or indirectly through one or more wholly-owned subsidiaries, free and clear of any claim, lien, encumbrance, security interest, restriction upon voting or transfer or any other claim of any third party.

(k) **No Conflicts.** The execution, delivery and performance of this Agreement by the Company, the issuance and sale of the Underwritten Securities or any Option Securities by the Company and the consummation of the transactions contemplated hereby and thereby will not (with or without notice or lapse of time or both) (i) conflict with or result in a breach or violation of any of the terms or provisions of, constitute a default or Debt Repayment Triggering Event (as defined below) under, give rise to any right of termination or other right or the cancellation or acceleration of any right or obligation or loss of a benefit under, or give rise to the creation or imposition of any lien, encumbrance, security interest, claim or charge upon any property or assets of the Company or any subsidiary pursuant to, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any of the property or assets of the Company or any of its subsidiaries is subject, (ii) result in any violation of the provisions of the charter or by-laws (or analogous governing instruments, as applicable) of the Company or any of its subsidiaries or (iii) result in any violation of any law, statute, rule, regulation, judgment, order or decree of any court or governmental agency or body, domestic or foreign, having jurisdiction over the Company or any of its subsidiaries or any of their properties or assets (each, a "**Governmental Authority**"), except, with respect to clauses (i) and (iii) of this subsection (h) such as would not, singly or in the aggregate, have a Material Adverse Effect. A "**Debt Repayment Triggering Event**" means any event or condition that gives, or with the giving of notice or lapse of time would give the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its subsidiaries.



(l) No Consents. Except for the registration of the Securities under the Act and such consents, approvals, authorizations, registrations or qualifications as may be required under the Exchange Act and applicable state or foreign securities laws, the Financial Industry Regulatory Authority (“**FINRA**”) and the Nasdaq Global Market (“**Nasdaq GM**”) in connection with the Offering by the Company, no consent, approval, authorization or order of, or filing, qualification or registration with, any court or governmental agency or body, foreign or domestic, which has not been made, obtained or taken and is not in full force and effect, is required for the execution, delivery and performance of this Agreement by the Company, the offer or sale of the Securities or the consummation of the transactions contemplated hereby or thereby.

(m) Independent Accountants. PricewaterhouseCoopers LLP has certified certain financial statements and related schedules included or incorporated by reference in the Registration Statement, the Disclosure Package and the Final Prospectus and is an independent registered public accounting firm as required by the Act and the Public Company Accounting Oversight Board (United States) (the “**PCAOB**”). Except as pre-approved in accordance with the requirements set forth in Section 10A of the Exchange Act, PricewaterhouseCoopers LLP has not been engaged by the Company to perform any “prohibited activities” (as defined in Section 10A of the Exchange Act).

(n) Financial Statements. The financial statements, together with the related notes and schedules, included or incorporated by reference in the Disclosure Package, the Final Prospectus and in the Registration Statement fairly present the financial position and the results of operations and changes in financial position, stockholders’ equity and cash flows of the Company and its consolidated subsidiaries and other consolidated entities at the respective dates or for the respective periods therein specified. Such statements and related notes and schedules have been prepared in accordance with generally accepted accounting principles in the United States (“**GAAP**”) applied on a consistent basis throughout the periods involved except as may be set forth in the related notes included or incorporated by reference in the Disclosure Package and except that the unaudited financial statements may not contain the footnotes required by GAAP and are subject to normal, recurring year-end adjustments. The financial statements, together with the related notes and schedules, included or incorporated by reference in the Disclosure Package and the Prospectus comply in all material respects with the Act and the Exchange Act. No other financial statements or supporting schedules or exhibits are required by the Act to be described, or included or incorporated by reference in the Registration Statement, the Disclosure Package or the Final Prospectus. There is no pro forma or as adjusted financial information which is required to be included in the Registration Statement, the Disclosure Package, the Final Prospectus or a document incorporated by reference therein in accordance with the Act which has not been included or incorporated as so required.

(o) Absence of Certain Events. Neither the Company nor any of its subsidiaries has sustained, since the date of the latest audited financial statements included or incorporated by reference in the Disclosure Package, any material loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, otherwise than as set forth or contemplated in the Disclosure Package; and, since such date, there has not been any material change in the capital stock or long-term debt of the Company other than pursuant to any employee benefit plans or similar plans as set forth in the Disclosure Package or incorporated by reference therein or any material adverse changes, or any development involving a material adverse change, in or affecting the business, assets, general affairs, management, financial position, prospects, stockholders' equity or results of operations of the Company and its subsidiaries taken as a whole, otherwise than as set forth or contemplated in the Disclosure Package.

(p) Absence of Proceedings. Except as set forth in the Disclosure Package, there is no legal or governmental action, suit, claim or proceeding pending to which the Company or any of its subsidiaries is a party or of which any property or assets of the Company or any of its subsidiaries is the subject which is required to be described in the Registration Statement, the Disclosure Package or the Final Prospectus or a document incorporated by reference therein and is not described therein, or which, singly or in the aggregate, if determined adversely to the Company or any of its subsidiaries, could reasonably be expected to have a Material Adverse Effect or prevent the consummation of the transactions contemplated hereby; and to the Company's knowledge, except as set forth in the Disclosure Package, no such proceedings are threatened or contemplated by governmental authorities or threatened by others.

(q) No Violations or Defaults. Neither the Company nor any of its subsidiaries is in (i) violation of its charter or by-laws (or analogous governing instrument, as applicable), (ii) default in any respect, and no event has occurred which, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant, obligation, agreement or condition contained in any indenture, mortgage, deed of trust, loan or credit agreement, other evidence of indebtedness, or any license, lease, contract or other agreement or instrument to which it is a party or by which the Company or its subsidiaries are bound or to which any of its property or assets is subject or (iii) violation in any respect of any statute, law, ordinance, governmental rule, regulation, ordinance, or court order, decree or judgment to which it or its property or assets may be subject except, in the case of clauses (ii) and (iii) of this subsection (n), for any violations or defaults which would not, singly or in the aggregate, have a Material Adverse Effect.

(r) Governmental Permits. The Company and each of its subsidiaries own or possess all approvals, licenses, certificates, clearances, consents, exemptions, marks, notifications, orders, authorizations and permits issued by, and have made all declarations and filings with, the appropriate local, state, federal or foreign regulatory agencies or bodies, including, without limitation, the Food and Drug Administration (the "FDA") and any agency of any foreign government and any other foreign regulatory authority exercising authority comparable to that of the FDA (including any non-governmental entity whose approval or authorization is required under foreign law comparable to that administered by

the FDA), which are necessary for the ownership of their respective properties or the conduct of their respective businesses as described in the Disclosure Package and the Final Prospectus (collectively, the “**Governmental Permits**”) and is in compliance with the terms and conditions of all such Governmental Permits, except where any failures to possess, comply or make the same would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect. All such Governmental Permits are valid and in full force and effect except where the validity or failure to be in full force and effect would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect. All such Governmental Permits are free and clear of any restriction or condition that are in addition to, or materially different from, those normally applicable to similar licenses, certificates, authorizations and permits. Neither the Company nor any of its subsidiaries has received any written notice of any revocation or modification of, any such Governmental Permit, which, individually or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would reasonably be expected to have a Material Adverse Effect.

(s) Investigational New Drugs; Studies and Trials. Except where the failure to be in compliance would not result in a Material Adverse Effect, each Investigational New Drug application (“**IND**”) submitted by the Company to the FDA or similar application submitted by the Company to foreign regulatory bodies, and related documents and information, (1) has been submitted and maintained in material compliance with applicable statutes, rules and regulations administered or promulgated by the FDA or other regulatory body, (2) the studies, tests and preclinical and clinical trials conducted by or on behalf of the Company that are described in the Disclosure Package or the Prospectus were and, if still pending, are being, conducted in all material respects in accordance with experimental protocols, procedures and controls pursuant to, where applicable, accepted professional and scientific standards for products or product candidates comparable to those being developed by the Company; and the drug substances or devices used in the clinical trials have been manufactured under current Good Manufacturing Practices, and (3) the Company uses commercially reasonable efforts to review, from time to time, the progress and results of the studies, tests and preclinical and clinical trials. To the Company’s knowledge, the descriptions of the results of such studies, tests and preclinical and clinical trials in the Disclosure Package are accurate and complete in all material respects. The Company has not received any notices or correspondence from the FDA or any foreign, state or local governmental body exercising comparable authority requiring the termination, suspension or material modification of any studies, tests or preclinical or clinical trials conducted by or on behalf of the Company except as described in the Disclosure Package.

(t) Regulatory Correspondence. The Company has made FDA and regulatory correspondence logs available to counsel to the Underwriters, and such logs contain complete and accurate descriptions, in all material respects, of all material correspondence between the Company on the one hand and the FDA or other regulatory body on the other hand, relating to the clinical trials of the Company’s product candidates under development being conducted under any Company-sponsored INDs described in the Disclosure Package.

(u) Investment Company Act. Neither the Company nor any of its subsidiaries is or, after giving effect to the Offering and the application of the proceeds thereof as described in the Disclosure Package and the Final Prospectus, will be required to register as an “investment company” within the meaning of the Investment Company Act of 1940, as amended, and the rules and regulations of the Commission thereunder.

(v) No Market Stabilization or Manipulation. Neither the Company, its subsidiaries nor, to the Company's knowledge, any of the Company's or its subsidiaries' officers, directors or affiliates has taken or will take, directly or indirectly, any action designed or intended to stabilize or manipulate the price of any security of the Company, or which caused or resulted in, or which could in the future reasonably be expected to cause or result in, stabilization or manipulation of the price of any security of the Company.

(w) Intellectual Property. The Company and each of its subsidiaries owns or possesses the right to use all patents, trademarks, trademark registrations, service marks, service mark registrations, trade names, copyrights, licenses, inventions, software, databases, know-how, Internet domain names, trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures, and other intellectual property (collectively, "**Intellectual Property**") necessary to carry on their respective businesses as currently conducted, and as proposed to be conducted and described in the Disclosure Package and the Final Prospectus, and, except as set forth in the Package and the Final Prospectus, the Company is not aware of any claim to the contrary or any challenge by any other person to the rights of the Company and its subsidiaries with respect to the foregoing except for those that could not have a Material Adverse Effect. The Intellectual Property licenses described in the Disclosure Package and the Prospectus are valid, binding upon, and enforceable by or against the parties thereto in accordance with their terms. Except as set forth in the Disclosure Package and the Prospectus, the Company and each of its subsidiaries has complied in all material respects with, and is not in breach nor has received any written asserted or threatened claim of breach of, any Intellectual Property license, and, except as set forth in the Disclosure Package and the Final Prospectus, the Company has no knowledge of any breach or anticipated breach by any other person to any Intellectual Property license. The Company's and each of its subsidiaries' businesses as now conducted and as proposed to be conducted and as described in the Disclosure Package and the Final Prospectus do not and will not infringe or conflict with any valid and enforceable patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses or other Intellectual Property or franchise right of any person. No claim has been made against the Company or any of its subsidiaries alleging the infringement by the Company or any of its subsidiaries of any patent, trademark, service mark, trade name, copyright, trade secret, license in or other intellectual property right or franchise right of any person except as could not reasonably be expected to have a Material Adverse Effect. The Company and each of its subsidiaries has taken all reasonable steps to protect, maintain and safeguard its rights in all Intellectual Property, including the execution of appropriate nondisclosure and confidentiality agreements. The consummation of the transactions contemplated by this Agreement will not result in the loss or impairment of or payment of any additional amounts with respect to, nor require the consent of any other person in respect of, the Company's or any of its subsidiaries' right to own, use, or hold for use any of the Intellectual Property as owned, used or held for use in the conduct of the businesses as currently conducted. The Company and each of its subsidiaries has at all times materially complied with all applicable laws relating to privacy, data protection, and the collection and use of personal information collected, used, or held for use by the Company and any of its

subsidiaries in the conduct of the Company's and its subsidiaries businesses except as could not reasonably be expected to have a Material Adverse Effect. No written claims have been asserted, or to the knowledge of the Company, have any claims been threatened, against the Company or any of its subsidiaries alleging a violation of any person's privacy or personal information or data rights and the consummation of the transactions contemplated hereby will not breach or otherwise cause any violation of any law related to privacy, data protection, or the collection and use of personal information collected, used, or held for use by the Company or any of its subsidiaries in the conduct of the Company's or any of its subsidiaries' businesses. The Company and each of its subsidiaries takes reasonable measures to ensure that such information is protected against unauthorized access, use, modification, or other misuse.

(x) Ownership of Assets. The Company and each of its subsidiaries have valid title in fee simple to, or have valid rights to lease or otherwise use, all items of real or personal property which are material to the business of the Company and its subsidiaries taken as a whole, in each case free and clear of all liens, encumbrances, security interests, claims and defects that do not, singly or in the aggregate, materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company or any of its subsidiaries except for those liens, encumbrances, security interests, claims and defects that would not reasonably be expected to have a Material Adverse Effect; and all of the leases and subleases material to the business of the Company and its subsidiaries, considered as one enterprise, and under which the Company or any of its subsidiaries holds properties described in the Disclosure Package and the Final Prospectus, are in full force and effect.

(y) Labor Matters. No labor disturbance by the employees of the Company or any of the Company's subsidiaries exists or, to the Company's knowledge, is threatened or imminent, and the Company is not aware of any existing or imminent labor disturbance by the employees of any of its or its subsidiaries' principal suppliers, manufacturers, customers or contractors, that could reasonably be expected, singly or in the aggregate, to have a Material Adverse Effect. The Company is not aware that any key employee or significant group of employees of the Company or any of the Company's subsidiaries plans to terminate employment with the Company or any of the Company's subsidiaries.

(z) ERISA and Employee Benefits Matters. No "prohibited transaction" (as defined in Section 406 of the Employee Retirement Income Security Act of 1974, as amended, including the regulations and published interpretations thereunder ("ERISA"), or Section 4975 of the Internal Revenue Code of 1986, as amended from time to time (the "Code")) or "accumulated funding deficiency" (as defined in Section 302 of ERISA) or any of the events set forth in Section 4043(b) of ERISA (other than events with respect to which the thirty (30)-day notice requirement under Section 4043 of ERISA has been waived) has occurred or could reasonably be expected to occur with respect to any employee benefit plan of the Company or any of its subsidiaries which could, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect. Each employee benefit plan of the Company or any of its subsidiaries is in compliance in all material respects with applicable law, including ERISA and the Code. The Company and its subsidiaries have not incurred and could not reasonably be expected to incur liability under Title IV of ERISA with respect to

the termination of, or withdrawal from, any pension plan (as defined in ERISA). Each pension plan for which the Company or any of its subsidiaries would have any liability that is intended to be qualified under Section 401(a) of the Code is so qualified, and nothing has occurred, whether by action or by failure to act, which could, singly or in the aggregate, reasonably be expected to cause the loss of such qualification.

(aa) Compliance with Environmental Laws. The Company and its subsidiaries are in compliance with all foreign, federal, state and local rules, laws and regulations relating to the use, treatment, storage and disposal of hazardous or toxic substances or waste and protection of health and safety or the environment which are applicable to their businesses ("**Environmental Laws**"), except where the failure to comply would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect. There has been no storage, generation, transportation, handling, treatment, disposal, discharge, emission, or other release of any kind of toxic or other wastes or other hazardous substances by, due to, or caused by the Company or any of its subsidiaries (or, to the Company's knowledge, any other entity for whose acts or omissions the Company or any of its subsidiaries is or may otherwise be liable) upon any of the property now or previously owned or leased by the Company or any of its subsidiaries, or upon any other property, in violation of any law, statute, ordinance, rule, regulation, order, judgment, decree or permit or which would, under any law, statute, ordinance, rule (including rule of common law), regulation, order, judgment, decree or permit, give rise to any liability, except for any violation or liability which would not have, singly or in the aggregate with all such violations and liabilities, reasonably be expected to have a Material Adverse Effect; and there has been no disposal, discharge, emission or other release of any kind onto such property or into the environment surrounding such property of any toxic or other wastes or other hazardous substances with respect to which the Company has knowledge, except for any such disposal, discharge, emission, or other release of any kind which would not reasonably be expected to have, singly or in the aggregate with all such discharges and other releases, a Material Adverse Effect.

(bb) Compliance with Occupational Laws. The Company and its subsidiaries are in compliance in all respects with all applicable provisions of the Occupational Safety and Health Act of 1970, as amended, including all applicable regulations thereunder, except for such noncompliance as would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(cc) Taxes. The Company and its subsidiaries, each (i) has timely filed all necessary federal, state, local and foreign tax returns (or timely filed applicable extensions therefor) that have been required to be filed, and all such returns were true, complete and correct, (ii) has paid all federal, state, local and foreign taxes, assessments, governmental or other charges that are due and payable for which it is liable, including, without limitation, all sales and use taxes and all taxes which the Company or any of its subsidiaries is obligated to withhold from amounts owing to employees, creditors and third parties, and (iii) does not have any tax deficiency or claims outstanding or assessed or, to its knowledge, proposed against any of them, except those, in each of the cases described in clauses (i), (ii) and (iii) of this subsection (z), that would not, singly or in the aggregate, have a Material Adverse Effect. The Company and its subsidiaries, each has not engaged in any transaction which is

a corporate tax shelter or which could be characterized as such by the Internal Revenue Service or any other taxing authority. The accruals and reserves on the books and records of the Company and its subsidiaries in respect of tax liabilities for any taxable period not yet finally determined are adequate to meet any assessments and related liabilities for any such period, and since December 31, 2017 the Company and its subsidiaries each has not incurred any liability for taxes other than in the ordinary course or as disclosed in the Disclosure Package.

(dd) Insurance. The Company and each of its subsidiaries carries, or is covered by, insurance in such amounts and covering such risks as is adequate for the conduct of their respective businesses and the value of their respective properties and as is customary for companies engaged in similar businesses in similar industries. The Company has no reason to believe that it and its subsidiaries will not be able to renew their existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue their respective businesses and at a cost that would not have a Material Adverse Effect.

(ee) Internal Controls. The Company and its subsidiaries each maintains a system of internal accounting and other controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; 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. Except as described in the Disclosure Package, since the end of the Company's most recent audited fiscal year, there has been (A) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (B) no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

(ff) Minute Books. The minute books for the last three (3) years of the Company and each of its subsidiaries that would be a "significant subsidiary" within the meaning of Rule 1-02(w) of Regulation S-X under the Exchange Act (such a significant subsidiary of the Company, a "**Significant Subsidiary**") have been made available to the Underwriters and counsel for the Underwriters, and such books (i) contain a complete summary of all meetings and actions of the board of directors (including each board committee) and stockholders of the Company (or analogous governing bodies and interest holders, as applicable), and each of its Significant Subsidiaries since the time of its respective incorporation or organization through the date of the latest meeting and action, and (ii) accurately in all material respects reflect all transactions referred to in such minutes.

(gg) Incorporated Documents. There is no franchise, lease, contract, agreement or document required by the Act to be described in the Disclosure Package and in the Final Prospectus or a document incorporated by reference therein or to be filed as an exhibit to the Registration Statement or a document incorporated by reference therein which is not

described or filed therein as required; and all descriptions of any such franchises, leases, contracts, agreements or documents contained in the Registration Statement or in a document incorporated by reference therein present fairly in all material respects the terms of such franchises, leases, contracts, agreements or documents. Other than as described in the Disclosure Package, no such franchise, lease, contract or agreement has been suspended or terminated for convenience or default by the Company or any of its subsidiaries or any of the other parties thereto, and neither the Company nor any of its subsidiaries has received notice nor does the Company have any other knowledge of any such pending or threatened suspension or termination, except for such pending or threatened suspensions or terminations that would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(hh) Affiliate Relationships. No relationship, direct or indirect, exists between or among the Company and any of its subsidiaries on the one hand, and the directors, officers, stockholders (or analogous interest holders), customers or suppliers of the Company or any of its subsidiaries or any of their affiliates on the other hand, which is required to be described in the Disclosure Package and the Final Prospectus or a document incorporated by reference therein and which is not so described.

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

(jj) Margin Securities. Neither the Company nor any of its subsidiaries owns any “margin securities” as that term is defined in Regulation U of the Board of Governors of the Federal Reserve System (the “**Federal Reserve Board**”), and none of the proceeds of the sale of any of the Securities will be used, directly or indirectly, for the purpose of purchasing or carrying any margin security, for the purpose of reducing or retiring any indebtedness which was originally incurred to purchase or carry any margin security or for any other purpose which might cause any of the Securities to be considered a “purpose credit” within the meanings of Regulation T, U or X of the Federal Reserve Board.

(kk) No Brokers or Finders. Neither the Company nor any of its subsidiaries is a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against the Company or the Underwriters for a brokerage commission, finder’s fee or like payment in connection with the Offering or any transaction contemplated by this Agreement, the Registration Statement, the Disclosure Package or the Final Prospectus.

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



(mm) Exchange Listing and Exchange Act Registration. The Company is subject to and in compliance in all material respects with the reporting requirements of Section 13 or Section 15(d) of the Exchange Act, and has filed in a timely manner all reports required to be filed pursuant to Sections 13(a), 13(e), 14 and 15(d) of the Exchange Act during the preceding twelve (12) months. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is listed on the Nasdaq GM, and the Company has taken no action designed to, or reasonably likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Nasdaq GM, nor has the Company received any notification that the Commission, FINRA or the Nasdaq Stock Exchange LLC (inclusive with the Nasdaq GM) is currently contemplating terminating such registration or listing. No consent, approval, authorization or order of, or filing, notification or registration with, the Nasdaq GM is required for the listing and trading of the shares of Common Stock on the Nasdaq GM, except for (i) a Notification Form: Listing of Option Shares; and (ii) a Notification Form: Change in the Number of Shares Outstanding.

(nn) Sarbanes-Oxley Act. The Company is in compliance in all material respects with all applicable effective provisions of the Sarbanes-Oxley Act of 2002 and any related rules and regulations promulgated by the Commission thereunder (the “**Sarbanes-Oxley Act**”).

(oo) Nasdaq Rules. The Company is in compliance in all material respects with all applicable corporate governance requirements set forth in the Nasdaq Stock Market Rules (and the related rules).

(pp) Transactions Affecting Liquidity or Capital Resources. There are no transactions, arrangements or other relationships between and/or among the Company, any of its affiliates (as such term is defined in Rule 405 of the Act) and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity that could reasonably be expected to materially affect the Company’s or any of its subsidiaries’ liquidity or the availability of or requirements for their capital resources required to be described in the Disclosure Package and the Final Prospectus or a document incorporated by reference therein which have not been described as required.

(qq) Related-Party Transactions. There are no outstanding loans, advances (except normal advances for business expenses in the ordinary course of business) or guarantees or indebtedness by the Company or any of its subsidiaries to or for the benefit of any of the officers or directors of the Company, any of its subsidiaries or any of their respective family members, except as disclosed in the Registration Statement, the Disclosure Package and the Final Prospectus.

(rr) Statistical Information. Any statistical, industry-related or market-related data included or incorporated by reference in the Registration Statement, the Final Prospectus or the Disclosure Package are based on or derived from sources that the Company believes to be reliable and accurate.

(ss) Anti-Bribery Laws. Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries is aware of or has taken any action, directly or indirectly, that could result in a violation by such persons of the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder or the U.K. Bribery Act 2010 or similar law of any other relevant jurisdiction; and neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries is aware of or has taken any action, directly or indirectly, that could result in a sanction for violation by such persons of the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder or the U.K. Bribery Act 2010 or similar law of any other relevant jurisdiction; and prohibition of noncompliance therewith is covered by the codes of conduct or other procedures instituted and maintained by the Company and its subsidiaries.

(tt) 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 and the money laundering statutes and the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “**Money Laundering Laws**”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened against the Company or any of its subsidiaries.

(uu) OFAC. Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries (i) is currently subject to any sanctions administered or imposed by the United States (including any administered or enforced by the Office of Foreign Assets Control of the U.S. Treasury Department, the U.S. Department of State, or the Bureau of Industry and Security of the U.S. Department of Commerce), the United Nations Security Council, the European Union, or the United Kingdom (including sanctions administered or controlled by Her Majesty’s Treasury) (collectively, “**Sanctions**” and such persons, “**Sanction Persons**”) or (ii) will, directly or indirectly, use the proceeds of this offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person in any manner that will result in a violation of any economic Sanctions by, or could result in the imposition of Sanctions against, any person (including any person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(vv) Sanctions. Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries, is a person that is, or is 50% or more owned or otherwise controlled by a person that is: (i) the subject of any Sanctions; or (ii) located, organized or resident in a country or territory that is, or whose government is, the subject of

Sanctions that broadly prohibit dealings with that country or territory (currently, the Crimea region of Ukraine, Cuba, Iran, North Korea, Sudan, and Syria) (collectively, “**Sanctioned Countries**” and each, a “**Sanctioned Country**”). Except as has been disclosed to the Underwriters or is not material to the analysis under any Sanctions, neither the Company nor any of its subsidiaries has engaged in any dealings or transactions with or for the benefit of a Sanctioned Person, or with or in a Sanctioned Country, in the preceding three years, nor does the Company or any of its subsidiaries have any plans to increase its dealings or transactions with Sanctioned Persons, or with or in Sanctioned Countries.

(ww) No FINRA Member Affiliation. Neither the Company nor any subsidiary nor, to the Company’s knowledge, any of their affiliates (within the meaning of FINRA’s NASD Conduct Rule 5121(f)(1)) directly or indirectly controls, is controlled by, or is under common control with, or is an associated person (within the meaning of Article I, Section 1(ee) of the By-laws of FINRA) of, any member firm of FINRA.

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

2. Purchase and Sale. (a) Subject to the terms and conditions and in reliance upon the representations and warranties herein set forth, the Company agrees to sell to each Underwriter, and each Underwriter agrees, severally and not jointly, to purchase from the Company, at the purchase price set forth in Schedule I hereto, the number of Underwritten Securities set forth opposite such Underwriter’s name in Schedule II hereto.

(b) Subject to the terms and conditions and in reliance upon the representations and warranties herein set forth, the Company hereby grants an option to the several Underwriters to purchase, severally and not jointly, up to the number of Option Securities set forth in Schedule I hereto at the same purchase price per share as the Underwriters shall pay for the Underwritten Securities, less an amount per share equal to any dividends or distributions declared by the Company and payable on the Underwritten Securities but not payable on the Option Securities. Said option may be exercised in whole or in part at any time on or before the 30th day after the date of the Final Prospectus upon written or telegraphic notice by the Representatives to the Company setting forth the number of Option Securities as to which the several Underwriters are exercising the option and the settlement date. The number of Option Securities to be purchased by each Underwriter shall be the same percentage of the total number of Option Securities to be purchased by the several Underwriters as such Underwriter is purchasing of the Underwritten Securities, subject to such adjustments as you in your absolute discretion shall make to eliminate any fractional shares.

3. Delivery and Payment. Delivery of and payment for the Underwritten Securities and the Option Securities (if the option provided for in Section 2(b) hereof shall have been exercised on or before the second Business Day immediately preceding the Closing Date) shall be made on the date and at the time specified in Schedule I hereto or at such time on such later date not more than two Business Days after the foregoing date as the Representatives shall

designate, which date and time may be postponed by agreement between the Representatives and the Company or as provided in Section 9 hereof (such date and time of delivery and payment for the Securities being herein called the “**Closing Date**”). Delivery of the Securities shall be made to the Representatives for the respective accounts of the several Underwriters against payment by the several Underwriters through the Representatives of the purchase price thereof to or upon the order of the Company by wire transfer payable in same-day funds to an account specified by the Company. Delivery of the Underwritten Securities and the Option Securities shall be made through the facilities of The Depository Trust Company unless the Representatives shall otherwise instruct.

If the option provided for in Section 2(b) hereof is exercised after the second Business Day immediately preceding the Closing Date, the Company will deliver the Option Securities to the Representatives through the facilities of The Depository Trust Company unless the Representatives shall otherwise instruct, on the date specified by the Representatives (which shall be within two Business Days after exercise of said option) for the respective accounts of the several Underwriters, against payment by the several Underwriters through the Representatives of the purchase price thereof to or upon the order of the Company by wire transfer payable in same-day funds to an account specified by the Company. If settlement for the Option Securities occurs after the Closing Date, the Company will deliver to the Representatives on the settlement date for the Option Securities, and the obligation of the Underwriters to purchase the Option Securities shall be conditioned upon receipt of, supplemental opinions, certificates and letters confirming as of such settlement date the opinions, certificates and letters delivered on the Closing Date pursuant to Section 6 hereof.

4. **Offering by Underwriters.** It is understood and agreed that the several Underwriters propose to offer the Securities for sale to the public as set forth in the Final Prospectus.

5. **Agreements.** The Company agrees with the several Underwriters that:

(a) Prior to the termination of the offering of the Securities, the Company will not file any amendment to the Registration Statement or supplement (including the Final Prospectus or any Preliminary Prospectus) to the Base Prospectus or any Rule 462(b) Registration Statement unless the Company has furnished you a copy for your review prior to filing and will not file any such proposed amendment or supplement to which you reasonably object. The Company will cause the Final Prospectus, properly completed, and any supplement thereto to be filed in a form approved by the Representatives with the Commission pursuant to the applicable paragraph of Rule 424(b) within the time period prescribed and will provide evidence satisfactory to the Representatives of such timely filing. The Company will promptly advise the Representatives (i) when the Final Prospectus, and any supplement thereto, shall have been filed (if required) with the Commission pursuant to Rule 424(b) or when any Rule 462(b) Registration Statement shall have been filed with the Commission, (ii) when, prior to termination of the offering of the Securities, any amendment to the Registration Statement shall have been filed or become effective, (iii) of any request by the Commission or its staff for any amendment of the Registration Statement, or any Rule 462(b) Registration Statement, or for any supplement to the Final Prospectus or for

any additional information, (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or of any notice objecting to its use or the institution or threatening of any proceeding for that purpose and (v) of the receipt by the Company of any notification with respect to the suspension of the qualification of the Securities for sale in any jurisdiction or the institution or threatening of any proceeding for such purpose. The Company will use its best efforts to prevent the issuance of any such stop order or the occurrence of any such suspension or objection to the use of the Registration Statement and, upon such issuance, occurrence or notice of objection, to obtain as soon as possible the withdrawal of such stop order or relief from such occurrence or objection, including, if necessary, by filing an amendment to the Registration Statement or a new registration statement and using its best efforts to have such amendment or new registration statement declared effective as soon as practicable.

(b) If, at any time prior to the filing of the Final Prospectus pursuant to Rule 424(b), any event occurs as a result of which the Disclosure Package would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein in the light of the circumstances under which they were made not misleading, the Company will (i) notify promptly the Representatives so that any use of the Disclosure Package may cease until it is amended or supplemented; (ii) amend or supplement the Disclosure Package to correct such statement or omission; and (iii) supply any amendment or supplement to you in such quantities as you may reasonably request.

(c) If, at any time when a prospectus relating to the Securities is required to be delivered under the Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172), any event occurs as a result of which the Final Prospectus as then supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein in the light of the circumstances under which they were made at such time not misleading, or if it shall be necessary to amend the Registration Statement, file a new registration statement or supplement the Final Prospectus to comply with the Act or the Exchange Act or the respective rules thereunder, including in connection with use or delivery of the Final Prospectus, the Company promptly will (i) notify the Representatives of any such event, (ii) prepare and file with the Commission, subject to the second sentence of paragraph (a) of this Section 5, an amendment or supplement or new registration statement which will correct such statement or omission or effect such compliance, (iii) use its best efforts to have any amendment to the Registration Statement or new registration statement declared effective as soon as practicable in order to avoid any disruption in use of the Final Prospectus and (iv) supply any supplemented Final Prospectus to you in such quantities as you may reasonably request.

(d) As soon as practicable consistent with the Company's prior practice, the Company will make generally available to its security holders and to the Representatives an earnings statement or statements of the Company and its subsidiaries which will satisfy the provisions of Section 11(a) of the Act and Rule 158.

(e) The Company will furnish to the Representatives and counsel for the Underwriters, without charge, signed or conformed copies of the Registration Statement (including exhibits thereto) and to each other Underwriter a copy of the Registration Statement (without exhibits thereto) and, so long as delivery of a prospectus by an Underwriter or dealer may be required by the Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172), as many copies of each Preliminary Prospectus, the Final Prospectus and each Issuer Free Writing Prospectus and any supplement thereto as the Representatives may reasonably request. The Company will pay the expenses of printing or other production of all documents relating to the offering.

(f) The Company will arrange, if necessary, for the qualification of the Securities for sale under the laws of such jurisdictions as the Representatives may designate and will maintain such qualifications in effect so long as required for the distribution of the Securities; provided that in no event shall the Company be obligated to qualify to do business in any jurisdiction where it is not now so qualified or to take any action that would subject it to service of process in suits, other than those arising out of the offering or sale of the Securities, in any jurisdiction where it is not now so subject.

(g) The Company agrees that, unless it has or shall have obtained the prior written consent of the Representatives, and each Underwriter, severally and not jointly, agrees with the Company that, unless it has or shall have obtained, as the case may be, the prior written consent of the Company, it has not made and will not make any offer relating to the Securities that would constitute an Issuer Free Writing Prospectus or that would otherwise constitute a "free writing prospectus" (as defined in Rule 405) required to be filed by the Company with the Commission or retained by the Company under Rule 433; provided that the prior written consent of the parties hereto shall be deemed to have been given in respect of the Free Writing Prospectuses included in Schedule III hereto and any electronic road show. Any such free writing prospectus consented to by the Representatives or the Company is hereinafter referred to as a "**Permitted Free Writing Prospectus.**" The Company agrees that (x) it has treated and will treat, as the case may be, each Permitted Free Writing Prospectus as an Issuer Free Writing Prospectus and (y) it has complied and will comply, as the case may be, with the requirements of Rules 164 and 433 applicable to any Permitted Free Writing Prospectus, including in respect of timely filing with the Commission, legending and record keeping.

(h) The Company will not, without the prior written consent of the Representatives, offer, sell, contract to sell, pledge, or otherwise dispose of, (or enter into any transaction which is designed to, or would reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the Company or any affiliate of the Company or any person in privity with the Company or any affiliate of the Company) directly or indirectly, including the filing (or participation in the filing) of a registration statement with the Commission in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Exchange Act, any other shares of Common Stock or any securities convertible into, or exercisable, or exchangeable for, shares of Common Stock; or publicly announce an intention to effect any such transaction, until the Business Day set forth on Schedule I hereto, provided, however, that the Company may issue and sell Common Stock to the Underwriters pursuant to this Agreement, pursuant to any director or employee benefit plans, qualified

stock option plans or other employee compensation plans of the Company in effect at the Execution Time and the Company may issue Common Stock pursuant to the valid exercises of options, warrants or rights outstanding at the Execution Time and the issuance of options, warrants or rights after the Execution Time in the ordinary course of business and consistent with past practice, including the filing of any registration statement on Form S-8 relating to such issuances.

(i) The Company will not take, directly or indirectly, any action designed to or that would constitute or that might reasonably be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities.

(j) The Company agrees to pay the costs and expenses relating to the following matters: (i) the preparation, printing or reproduction and filing with the Commission of the Registration Statement (including financial statements and exhibits thereto), each Preliminary Prospectus, the Final Prospectus and each Issuer Free Writing Prospectus, and each amendment or supplement to any of them; (ii) the printing (or reproduction) and delivery (including postage, air freight charges and charges for counting and packaging) of such copies of the Registration Statement, each Preliminary Prospectus, the Final Prospectus and each Issuer Free Writing Prospectus, and all amendments or supplements to any of them, as may, in each case, be reasonably requested for use in connection with the offering and sale of the Securities; (iii) the preparation, printing, authentication, issuance and delivery of certificates for the Securities, including any stamp or transfer taxes in connection with the original issuance and sale of the Securities; (iv) the printing (or reproduction) and delivery of this Agreement, any blue sky memorandum and all other agreements or documents printed (or reproduced) and delivered in connection with the offering of the Securities; (v) the registration of the Securities under the Exchange Act and the listing of the Securities on the Nasdaq GM; (vi) any registration or qualification of the Securities for offer and sale under the securities or blue sky laws of the several states (including filing fees and the reasonable fees and expenses of counsel for the Underwriters relating to such registration and qualification in an amount not to exceed \$10,000); (vii) any filings required to be made with "FINRA (including filing fees and the reasonable fees and expenses of counsel for the Underwriters relating to such filings in an amount not to exceed \$15,000); (viii) the transportation and other expenses incurred by or on behalf of Company representatives in connection with presentations to prospective purchasers of the Securities; (ix) the fees and expenses of the Company's accountants and the fees and expenses of counsel (including local and special counsel) for the Company; and (x) all other costs and expenses incident to the performance by the Company of its obligations hereunder.

6. Conditions to the Obligations of the Underwriters. The obligations of the Underwriters to purchase the Underwritten Securities and the Option Securities, as the case may be, shall be subject to the accuracy of the representations and warranties on the part of the Company contained herein as of the Execution Time, the Closing Date and any settlement date pursuant to Section 3 hereof, 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 the following additional conditions:

(a) The Final Prospectus, and any supplement thereto, have been filed in the manner and within the time period required by Rule 424(b); any material required to be filed by the Company pursuant to Rule 433(d) under the Act, shall have been filed with the Commission within the applicable time periods prescribed for such filings by Rule 433; and no stop order suspending the effectiveness of the Registration Statement or any notice objecting to its use shall have been issued and no proceedings for that purpose shall have been instituted or threatened.

(b) The Company shall have requested and caused Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, counsel for the Company, to have furnished to the Representatives an opinion and negative assurance letter, in each case, dated the Closing Date and addressed to the Representatives, in form and substance reasonably satisfactory to the Representatives.

(c) The Company shall have requested and caused Hoffman Warnick LLC, intellectual property counsel for the Company, to have furnished to the Representatives their opinion, dated the Closing Date and addressed to the Representatives, in form and substance reasonably satisfactory to the Representatives.

(d) The Representatives shall have received from Proskauer Rose LLP, counsel for the Underwriters, their opinion, dated the Closing Date and addressed to the Representatives, in form and substance reasonably satisfactory to the Representatives, and the Company shall have furnished to such counsel such documents as they request for the purpose of enabling them to pass upon such matters.

(e) The Company shall have furnished to the Representatives a certificate of the Company, signed by the chief executive officer and the chief financial officer of the Company, dated the Closing Date, to the effect that the signers of such certificate have carefully examined the Registration Statement, the Disclosure Package, the Final Prospectus and any supplements or amendments thereto, as well as each electronic road show used in connection with the offering of the Securities, and this Agreement and that:

(i) the representations and warranties of the Company in this Agreement are true and correct in all material respects (except that any representation and warranty that is qualified as to "materiality" or "Material Adverse Change" shall be true and correct in all respects) on and as of the Closing Date with the same effect as if made at and as of such Closing Date, and the Company has complied with all the agreements and satisfied all the conditions on its part to be performed or satisfied at or prior to such Closing Date;

(ii) no stop order or other order suspending the effectiveness of the Registration Statement or any part thereof or any amendment thereof or the qualification of the Securities for offering or sale nor suspending or preventing the use of the Disclosure Package, the Final Prospectus or any Issuer Free Writing Prospectus, has been issued, and no proceeding for that purpose has been instituted or, to the Company's knowledge, threatened by the Commission or any state or regulatory body; and



(iii) since the date of the most recent financial statements included in the Disclosure Package and the Final Prospectus (exclusive of any supplement thereto), there has been no material adverse effect on the condition (financial or otherwise), results of operations, business or prospects of the Company and its subsidiaries taken as a whole, whether or not arising from transactions in the ordinary course of business, except as set forth in or contemplated in the Disclosure Package and the Final Prospectus (exclusive of any amendment or supplement thereto).

(f) The Company shall have requested and caused PricewaterhouseCoopers LLP to have furnished to the Representatives, at the Execution Time and at the Closing Date, "comfort letters", (which may refer to letters previously delivered to one or more of the Representatives), dated respectively as of the Execution Time and as of the Closing Date, in form and substance satisfactory to the Representatives.

(g) Subsequent to the Execution Time or, if earlier, the dates as of which information is given in the Registration Statement (exclusive of any amendment thereof) and the Final Prospectus (exclusive of any amendment or supplement thereto), there shall not have been (i) any change or decrease specified in the letter or letters referred to in paragraph (e) of this Section 6 or (ii) any change, or any development involving a prospective change, in or affecting the condition (financial or otherwise), earnings, business or properties of the Company and its subsidiaries taken as a whole, whether or not arising from transactions in the ordinary course of business, except as set forth in or contemplated in the Disclosure Package and the Final Prospectus (exclusive of any amendment or supplement thereto) the effect of which, in any case referred to in clause (i) or (ii) above, is, in the sole judgment of the Representatives, so material and adverse as to make it impractical or inadvisable to proceed with the offering or delivery of the Securities as contemplated by the Registration Statement (exclusive of any amendment thereof), the Disclosure Package and the Final Prospectus (exclusive of any amendment or supplement thereto).

(h) Prior to the Closing Date, the Company shall have furnished to the Representatives such further information, certificates and documents as the Representatives may reasonably request.

(i) The Securities shall have been approved for listing on the Nasdaq GM, subject to official notice of issuance.

(j) The Company shall have furnished to the Representatives a back-up certificate of the Company, signed by the chief financial officer of the, at the Execution Time and at the Closing Date, providing back-up support as specified therein, in form and substance reasonably satisfactory to the Representatives.

If any of the conditions specified in this Section 6 shall not have been fulfilled when and as provided in this Agreement, or if any of the opinions and certificates mentioned above or elsewhere in this Agreement shall not be reasonably satisfactory in form and substance to the Representatives and counsel for the Underwriters, this Agreement and all obligations of the Underwriters hereunder may be canceled at, or at any time prior to, the Closing Date by the Representatives. Notice of such cancellation shall be given to the Company in writing or by telephone or facsimile confirmed in writing.

The documents required to be delivered by this Section 6 shall be delivered at the office of Proskauer Rose LLP, counsel for the Underwriters, at 11 Times Square, New York, New York 10036, or remotely via the exchange of electronic documents and signatures, on the Closing Date.

7. Reimbursement of Underwriters' Expenses. If the sale of the Securities provided for herein is not consummated because any condition to the obligations of the Underwriters set forth in Section 6 hereof is not satisfied, because of any termination pursuant to Section 10 hereof or because of any refusal, inability or failure on the part of the Company to perform any agreement herein or comply with any provision hereof other than by reason of a default by any of the Underwriters, the Company will reimburse the Underwriters severally through Citigroup Global Markets Inc. on demand for all reasonable and documented out-of-pocket expenses (including reasonable fees and disbursements of counsel) that shall have been incurred by them in connection with the proposed purchase and sale of the Securities.

8. Indemnification and Contribution. (a) The Company agrees to indemnify and hold harmless each Underwriter, the directors, officers, employees, affiliates and selling agents of each Underwriter and each person who controls any Underwriter within the meaning of either the Act or the Exchange Act against any and all losses, claims, damages or liabilities, joint or several, to which they or any of them may become subject under the Act, the Exchange Act or other Federal or state statutory law or regulation, at common law or otherwise, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in the registration statement for the registration of the Securities as originally filed or in any amendment thereof, or in the Base Prospectus, any Preliminary Prospectus or any other preliminary prospectus supplement relating to the Securities, the Final Prospectus, or any Issuer Free Writing Prospectus or in any amendment thereof or supplement thereto or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary in order to make the statements therein not misleading (with respect to the Base Prospectus, any Preliminary Prospectus or any other preliminary prospectus supplement relating to the Securities, the Final Prospectus, or any Issuer Free Writing Prospectus, in light of the circumstances under which they were made), and agrees to reimburse each such indemnified party, as incurred, for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action; provided, however, that the Company will not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon any such untrue statement or alleged untrue statement or omission or alleged omission made therein in reliance upon and in conformity with written information furnished to the Company by or on behalf of any Underwriter through the Representatives specifically for inclusion therein. This indemnity agreement will be in addition to any liability which the Company may otherwise have.

(b) Each Underwriter severally and not jointly agrees to indemnify and hold harmless the Company, each of its directors, each of its officers who signs the Registration Statement, and each person who controls the Company within the meaning of either the Act or the Exchange Act, to the same extent as the foregoing indemnity from the Company to each Underwriter, but only with reference to written information relating to such Underwriter furnished to the Company by or on behalf of such Underwriter through the Representatives specifically for inclusion in the documents referred to in the foregoing indemnity. This indemnity agreement will be in addition to any liability which any Underwriter may otherwise have. The Company acknowledges that the statements set forth (i) in the last paragraph of the cover page regarding delivery of the Securities and, under the heading "Underwriting", (ii) the list of Underwriters and their respective participation in the sale of the Securities, (iii) the sentences related to concessions and reallowances and (iv) the paragraph related to stabilization, syndicate covering transactions and penalty bids in any Preliminary Prospectus and the Final Prospectus constitute the only information furnished in writing by or on behalf of the several Underwriters for inclusion in any Preliminary Prospectus, the Final Prospectus or any Issuer Free Writing Prospectus.

(c) Promptly after receipt by an indemnified party under this Section 8 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against the indemnifying party under this Section 8, notify the indemnifying party in writing of the commencement thereof; but the failure so to notify the indemnifying party (i) will not relieve it from liability under paragraph (a) or (b) above unless and to the extent it did not otherwise learn of such action and such failure results in the forfeiture by the indemnifying party of substantial rights and defenses and (ii) will not, in any event, relieve the indemnifying party from any obligations to any indemnified party other than the indemnification obligation provided in paragraph (a) or (b) above. The indemnifying party shall be entitled to appoint counsel of the indemnifying party's choice at the indemnifying party's expense to represent the indemnified party in any action for which indemnification is sought (in which case the indemnifying party shall not thereafter be responsible for the fees and expenses of any separate counsel retained by the indemnified party or parties except as set forth below); provided, however, that such counsel shall be satisfactory to the indemnified party. Notwithstanding the indemnifying party's election to appoint counsel to represent the indemnified party in an action, the indemnified party shall have the right to employ separate counsel (including local counsel), and the indemnifying party shall bear the reasonable fees, costs and expenses of such separate counsel if (i) the use of counsel chosen by the indemnifying party to represent the indemnified party would present such counsel with a conflict of interest, (ii) the actual or potential defendants in, or targets of, any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, (iii) the indemnifying party shall not have

employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of the institution of such action or (iv) the indemnifying party shall authorize the indemnified party to employ separate counsel at the expense of the indemnifying party. An indemnifying party will not, without the prior written consent of the indemnified parties, settle or compromise or consent to the entry of any judgment with respect to any pending or threatened claim, action, suit or proceeding in respect of which indemnification or contribution may be sought hereunder (whether or not the indemnified parties are actual or potential parties to such claim or action) unless such settlement, compromise or consent: (i) includes an unconditional release of each indemnified party from all liability arising out of such claim, action, suit or proceeding and (ii) does not include an admission of fault.

(d) In the event that the indemnity provided in paragraph (a), (b) or (c) of this Section 8 is unavailable to or insufficient to hold harmless an indemnified party for any reason, the Company and the Underwriters severally agree to contribute to the aggregate losses, claims, damages and liabilities (including legal or other expenses reasonably incurred in connection with investigating or defending the same) (collectively “**Losses**”) to which the Company and one or more of the Underwriters may be subject in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and by the Underwriters on the other from the offering of the Securities. If the allocation provided by the immediately preceding sentence is unavailable for any reason, the Company and the Underwriters severally shall contribute in such proportion as is appropriate to reflect not only such relative benefits but also the relative fault of the Company on the one hand and of the Underwriters on the other in connection with the statements or omissions which resulted in such Losses as well as any other relevant equitable considerations. Benefits received by the Company shall be deemed to be equal to the total net proceeds from the offering (before deducting expenses) received by it, and benefits received by the Underwriters shall be deemed to be equal to the total underwriting discounts and commissions, in each case as set forth on the cover page of the Final Prospectus. Relative fault shall be determined by reference to, among other things, whether any untrue or any alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information provided 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 or omission. The Company and the Underwriters agree that it would not be just and equitable if contribution were determined by pro rata allocation or any other method of allocation which does not take account of the equitable considerations referred to above. Notwithstanding the provisions of this paragraph (d), in no event shall any Underwriter be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the Securities exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 8, each person who controls an Underwriter within the meaning of either the Act or the Exchange Act and each director,

officer, employee, affiliate and selling agent of an Underwriter shall have the same rights to contribution as such Underwriter, and each person who controls the Company within the meaning of either the Act or the Exchange Act, each officer of the Company who shall have signed the Registration Statement and each director of the Company shall have the same rights to contribution as the Company, subject in each case to the applicable terms and conditions of this paragraph (d).

9. Default by an Underwriter. If any one or more Underwriters shall fail to purchase and pay for any of the Securities agreed to be purchased by such Underwriter or Underwriters hereunder and such failure to purchase shall constitute a default in the performance of its or their obligations under this Agreement, the remaining Underwriters shall be obligated severally to take up and pay for (in the respective proportions which the amount of Securities set forth opposite their names in Schedule II hereto bears to the aggregate amount of Securities set forth opposite the names of all the remaining Underwriters) the Securities which the defaulting Underwriter or Underwriters agreed but failed to purchase; provided, however, that in the event that the aggregate amount of Securities which the defaulting Underwriter or Underwriters agreed but failed to purchase shall exceed 10% of the aggregate amount of Securities set forth in Schedule II hereto, the remaining Underwriters shall have the right to purchase all, but shall not be under any obligation to purchase any, of the Securities, and if such nondefaulting Underwriters do not purchase all the Securities, this Agreement will terminate without liability to any nondefaulting Underwriter or the Company. In the event of a default by any Underwriter as set forth in this Section 9, the Closing Date shall be postponed for such period, not exceeding five Business Days, as the Representatives shall determine in order that the required changes in the Registration Statement and the Final Prospectus or in any other documents or arrangements may be effected. Nothing contained in this Agreement shall relieve any defaulting Underwriter of its liability, if any, to the Company and any nondefaulting Underwriter for damages occasioned by its default hereunder.

10. Termination. This Agreement shall be subject to termination in the absolute discretion of the Representatives, by notice given to the Company prior to delivery of and payment for the Securities, if at any time prior to such delivery and payment (i) trading in the Company's Common Stock shall have been suspended by the Commission or the Nasdaq GM or trading in securities generally on the New York Stock Exchange or the Nasdaq GM shall have been suspended or limited or minimum prices shall have been established on either of such exchanges, (ii) a banking moratorium shall have been declared either by Federal or New York State authorities, (iii) there shall have occurred a material disruption in commercial banking or securities settlement or clearance services or (iv) there shall have occurred any outbreak or escalation of hostilities, declaration by the United States of a national emergency or war, or other calamity or crisis the effect of which on financial markets is such as to make it, in the sole judgment of the Representatives, impracticable or inadvisable to proceed with the offering or delivery of the Securities as contemplated by any Preliminary Prospectus or the Final Prospectus (exclusive of any amendment or supplement thereto).

11. Representations and Indemnities to Survive. The respective agreements, representations, warranties, indemnities and other statements of the Company or its officers and of the Underwriters set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter or the Company

or any of the officers, directors, employees, affiliates, selling agents or controlling persons referred to in Section 8 hereof, and will survive delivery of and payment for the Securities. The provisions of Sections 7 and 8 hereof shall survive the termination or cancellation of this Agreement.

12. Notices. All communications hereunder will be in writing and effective only on receipt, and, if sent to the Representatives, will be mailed, delivered or telefaxed to (i) the Citigroup Global Markets Inc. General Counsel (fax no.: (646)-291-1469) and confirmed to the General Counsel, Citigroup Global Markets Inc., at 388 Greenwich Street, New York, New York, 10013, Attention: General Counsel; and (ii) Jefferies LLC, 520 Madison Avenue, New York, New York 10022, Attention: General Counsel or, if sent to the Company, will be mailed, delivered or telefaxed to Vanda Pharmaceuticals Inc., 2200 Pennsylvania Avenue, N.W., Suite 300E, Washington, D.C. 20037, Attention: Chief Financial Officer), with a copy to Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, One Marina Park Drive, Suite 900, Boston, Massachusetts 02110, Attention: Gregg A. Griner, Esq.

13. Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto and their respective successors and the officers, directors, employees, affiliates, selling agents and controlling persons referred to in Section 8 hereof, and no other person will have any right or obligation hereunder.

14. No Fiduciary Duty. The Company hereby acknowledges that (a) the purchase and sale of the Securities pursuant to this Agreement is an arm's-length commercial transaction between the Company, on the one hand, and the Underwriters and any affiliate through which it may be acting, on the other, (b) the Underwriters are acting as principal and not as an agent or fiduciary of the Company and (c) the Company's engagement of the Underwriters in connection with the offering and the process leading up to the offering is as independent contractors and not in any other capacity. Furthermore, the Company agrees that it is solely responsible for making its own judgments in connection with the offering (irrespective of whether any of the Underwriters has advised or is currently advising the Company on related or other matters). The Company agrees that it will not claim that the Underwriters have rendered advisory services of any nature or respect, or owe an agency, fiduciary or similar duty to the Company, in connection with such transaction or the process leading thereto.

15. Integration. This Agreement supersedes all prior agreements and understandings (whether written or oral) between the Company and the Underwriters, or any of them, with respect to the subject matter hereof.

16. Applicable Law. This Agreement will be governed by and construed in accordance with the laws of the State of New York applicable to contracts made and to be performed within the State of New York.

17. Waiver of Jury Trial. The Company and the Representatives, on behalf of each of the Underwriters, hereby irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

18. Counterparts. This Agreement may be signed in one or more counterparts, each of which shall constitute an original and all of which together shall constitute one and the same agreement.

19. Headings. The section headings used herein are for convenience only and shall not affect the construction hereof.

20. Authority of the Representatives. Any action by the Underwriters hereunder must be taken by the Representatives on behalf of the Underwriters, and any such action taken by the Representatives shall be binding upon the Underwriters.

21. Definitions. The terms that follow, when used in this Agreement, shall have the meanings indicated.

“**Act**” shall mean the Securities Act of 1933, as amended, and the rules and regulations of the Commission promulgated thereunder.

“**Base Prospectus**” shall mean the base prospectus referred to in paragraph 1(a) above contained in the Registration Statement at the Execution Time.

“**Business Day**” shall mean any day other than a Saturday, a Sunday or a legal holiday or a day on which banking institutions or trust companies are authorized or obligated by law to close in New York City.

“**Commission**” shall mean the Securities and Exchange Commission.

“**Disclosure Package**” shall mean (i) the Base Prospectus, (ii) the Preliminary Prospectus used most recently prior to the Execution Time, (iii) the Issuer Free Writing Prospectuses, if any, identified in Schedule III hereto, and (iv) any other Free Writing Prospectus that the parties hereto shall hereafter expressly agree in writing to treat as part of the Disclosure Package.

“**Effective Date**” shall mean each date and time that the Registration Statement and any post-effective amendment or amendments thereto and any Rule 462(b) Registration Statement became or becomes effective.

“**Exchange Act**” shall mean the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission promulgated thereunder.

“**Execution Time**” shall mean the date and time that this Agreement is executed and delivered by the parties hereto.

“**Final Prospectus**” shall mean the prospectus supplement relating to the Securities that was first filed pursuant to Rule 424(b) after the Execution Time, together with the Base Prospectus.

“**Free Writing Prospectus**” shall mean a free writing prospectus, as defined in Rule 405.

**“Issuer Free Writing Prospectus”** shall mean an issuer free writing prospectus, as defined in Rule 433.

**“Preliminary Prospectus”** shall mean any preliminary prospectus supplement to the Base Prospectus referred to in paragraph 1(a) above which is used prior to the filing of the Final Prospectus, together with the Base Prospectus.

**“Registration Statement”** shall mean the registration statement referred to in paragraph 1(a) above, including exhibits and financial statements and any prospectus supplement relating to the Securities that is filed with the Commission pursuant to Rule 424(b) and deemed part of such registration statement pursuant to Rule 430B, as amended on each Effective Date and, in the event any post-effective amendment thereto or any Rule 462(b) Registration Statement becomes effective prior to the Closing Date, shall also mean such registration statement as so amended or such Rule 462(b) Registration Statement, as the case may be.

**“Rule 158”, “Rule 163”, “Rule 164”, “Rule 172”, “Rule 405”, “Rule 415”, “Rule 424”, “Rule 430B”, “Rule 433” and “Rule 462”** refer to such rules under the Act.

**“Rule 462(b) Registration Statement”** shall mean a registration statement and any amendments thereto filed pursuant to Rule 462(b) relating to the offering covered by the registration statement referred to in Section 1(a) hereof.

*[Signature Page Follows]*



If the foregoing is in accordance with your understanding of our agreement, please sign and return to us the enclosed duplicate hereof, whereupon this Agreement and your acceptance shall represent a binding agreement among the Company and the several Underwriters.

Very truly yours,

VANDA PHARMACEUTICALS INC.

By: /s/ Mihael H. Polymeropoulos  
Name: Mihael H. Polymeropoulos  
Title: CEO

*[Signature Page to the Underwriting Agreement]*

The foregoing Agreement is  
hereby confirmed and accepted  
as of the date specified in  
Schedule I hereto.

CITIGROUP GLOBAL MARKETS INC.

By: /s/ Rizwan Velji

Name: Rizwan Velji

Title: Managing Director

JEFFERIES LLC

By: /s/ Charles Glazer

Name: Charles Glazer

Title: Senior Vice President

For themselves and the other  
several Underwriters, if any,  
named in Schedule II to the  
foregoing Agreement.

*[Signature Page to the Underwriting Agreement]*

SCHEDULE I

Underwriting Agreement dated March 15, 2018

Registration Statement No. 333-205513

Representatives: Citigroup Global Markets Inc. and Jefferies LLC.

Title, Purchase Price and Description of Securities:

Title: Common Stock, \$0.001 par value

Number of Underwritten Securities to be sold by the Company: 5,500,000

Number of Option Securities to be sold by the Company: 825,000

Price per Share to Public (include accrued dividends, if any): \$17.00

Price per Share to the Underwriters – total: \$15.98

Other provisions:

Closing Date, Time and Location:

March 20, 2018 at 10:00 a.m. at the offices of Proskauer Rose LLP, 11 Times Square, New York, New York 10036.

Type of Offering: Non-Delayed

Date referred to in Section 5(h) after which the Company may offer or sell securities issued by the Company without the consent of the Representative(s):  
June 13, 2018

Modification of items to be covered by the letter from PricewaterhouseCoopers LLP delivered pursuant to Section 6(e) at the Execution Time: NONE

SCHEDULE II

<u>Underwriters</u>	<u>Number of Underwritten Securities to be Purchased</u>
Citigroup Global Markets Inc.	2,062,500
Jefferies LLC	1,787,500
Stifel, Nicolaus & Company, Incorporated	825,000
JMP Securities LLC	550,000
Oppenheimer & Co. Inc.	275,000
Total	<u>5,500,000</u>

SCHEDULE III

Schedule of Free Writing Prospectuses included in the Disclosure Package

NONE

Vanda Pharmaceuticals Inc.  
Public Offering of Common Stock

March 12, 2018

Citigroup Global Markets Inc.  
Jefferies LLC

As Representatives of the several Underwriters,  
c/o Citigroup Global Markets Inc.  
388 Greenwich Street  
New York, New York 10013

Ladies and Gentlemen:

This letter is being delivered to you in connection with the proposed Underwriting Agreement (the “**Underwriting Agreement**”), between Vanda Pharmaceuticals Inc., a Delaware corporation (the “**Company**”), and each of you as representatives of a group of Underwriters named therein, relating to an underwritten public offering (the “**Offering**”) of Common Stock, \$0.001 par value (the “**Common Stock**”), of the Company.

In order to induce you and the other Underwriters to enter into the Underwriting Agreement, the undersigned will not, without the prior written consent of Citigroup Global Markets Inc. and Jefferies LLC, offer, sell, contract to sell, pledge or otherwise dispose of, (or enter into any transaction which is designed to, or would reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the undersigned or any affiliate of the undersigned or any person in privity with the undersigned or any affiliate of the undersigned), directly or indirectly, including the filing (or participation in the filing) of a registration statement with the Securities and Exchange Commission in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), and the rules and regulations of the Securities and Exchange Commission (the “**Commission**”) promulgated thereunder with respect to, any shares of capital stock of the Company or any securities convertible into or exercisable or exchangeable for such capital stock, or publicly announce an intention to effect any such transaction, for a period from the date hereof until 90 days after the date of the Underwriting Agreement (the “**Lock-up Period**”).

Notwithstanding the foregoing, the undersigned may transfer any of the undersigned’s Securities (i) as a bona fide gift or gifts, (ii) to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned or (iii) transfers by testate succession or intestate succession; provided, in the case of clauses (i)-(iii), that (x) such transfer shall not involve a disposition for value, (y) the transferee agrees in writing with the Underwriters to be bound by the terms of this letter agreement, and (z) no filing by any party under Section 16(a) of the Exchange Act, shall be required or shall be made voluntarily in connection with such transfer. For purposes of this Agreement, “immediate family” shall mean any relationship by blood, marriage or adoption, not more remote than first cousin.

In addition, the foregoing restrictions shall not apply to (i) the exercise of stock options granted pursuant to the Company's equity incentive plans; provided that it shall apply to any of the undersigned's securities issued upon such exercise, or (ii) the establishment of any contract, instruction or plan (a "**Plan**") that satisfies all of the requirements of Rule 10b5-1(c)(1)(i)(B) under the Exchange Act; provided that no sales of the undersigned's securities shall be made pursuant to such a Plan prior to the expiration of the Lock-Up Period, and such a Plan may only be established if no public announcement of the establishment or existence thereof and no filing with the Commission or other regulatory authority in respect thereof or transactions thereunder or contemplated thereby, by the undersigned, the Company or any other person, shall be required, and no such announcement or filing is made voluntarily, by the undersigned, the Company or any other person, prior to the expiration of the Lock-Up Period.

In furtherance of the foregoing, the Company and its transfer agent and registrar are hereby authorized to decline to make any transfer of shares of Common Stock if such transfer would constitute a violation or breach of this letter agreement.

The undersigned understands that the undersigned shall be released from all obligations under this letter agreement if (i) the Company notifies the Underwriters that it does not intend to proceed with the Offering, (ii) the Underwriting Agreement does not become effective, or if the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Securities to be sold thereunder, or (iii) the Offering is not completed by April 30, 2018.

Yours very truly,

**[Signature of officer or director]**

March 15, 2018

Vanda Pharmaceuticals Inc.  
2200 Pennsylvania Avenue NW  
Suite 300E  
Washington, DC 20037

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the sale by Vanda Pharmaceuticals Inc., a Delaware corporation (the "**Company**"), of up to an aggregate of 6,325,000 shares of the Company's common stock, par value \$0.001 per share (the "**Shares**") (including up to 825,000 shares that may be sold pursuant to the exercise of an option to purchase additional shares granted by the Company to the underwriters), pursuant to the Registration Statement on Form S-3 (File No. 333-205513) (the "**Registration Statement**") filed with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Act**"), on July 6, 2015 and the related prospectus dated July 21, 2015 included in the Registration Statement (the "**Base Prospectus**"), the prospectus supplement to be filed with the Commission pursuant to Rule 424(b) promulgated under the Act (the "**Prospectus Supplement**" and, together with the Base Prospectus, the "**Prospectus**"), and an underwriting agreement dated March 15, 2018 among Citigroup Global Markets Inc. and Jefferies LLC, as representatives of the several underwriters named in the underwriting agreement, and the Company (the "**Underwriting Agreement**").

In connection with this opinion, we have examined and relied upon the Registration Statement, the Prospectus, the Company's Restated Certificate of Incorporation and Amended and Restated Bylaws, as currently in effect, and the originals or copies certified to our satisfaction of such other documents, records, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. With your consent, we have relied upon certificates and other assurances of officers of the Company as to factual matters without having independently verified such factual matters. 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 thereof and the due execution and delivery by all parties other than the Company of all documents where due execution and delivery are a prerequisite to the effectiveness thereof.

This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or the Prospectus, other than as expressly stated herein with respect to the issue of the Shares. Our opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. Our opinion herein is expressed solely with respect to the General Corporation Law of the State of Delaware and we express no opinion with respect to any other laws. Our opinion is based on these laws as in effect on the date hereof, and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, when the Shares to be issued and sold by the Company are issued and paid for in accordance with the terms of the Underwriting Agreement, such Shares 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. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP

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GUNDERSON DETTMER STOUGH VILLENEUVE FRANKLIN & HACHIGIAN, LLP



**Vanda Pharmaceuticals Inc. Prices Public Offering of Common Stock**

WASHINGTON, March 15, 2018 /PRNewswire/ – Vanda Pharmaceuticals Inc. (Vanda) (Nasdaq: VNDA) today announced the sale of 5,500,000 shares of its common stock in an underwritten public offering at a price to the public of \$17.00 per share. The gross offering proceeds to Vanda from the sale of the shares are expected to be approximately \$93.5 million. After deducting underwriting discounts and commissions and other estimated offering expenses, the net offering proceeds to Vanda are expected to be approximately \$87.6 million. In addition, Vanda has granted the underwriters a 30-day option to purchase up to an additional 825,000 shares of common stock on the same terms and conditions.

Vanda anticipates using the net proceeds from this offering for commercial, research and development activities and other general corporate purposes. The offering is expected to close on or about March 20, 2018, subject to customary closing conditions.

Citigroup and Jefferies are acting as joint book-running managers for the offering. Stifel is also acting as a book-running manager for the offering. JMP Securities is acting as the lead manager for the offering and Oppenheimer & Co. is acting as the co-manager for the offering.

The shares described above will be issued pursuant to a prospectus supplement filed as part of a shelf registration statement on Form S-3 previously filed with and declared effective by the Securities and Exchange Commission (SEC). The offering may be made only by means of a prospectus supplement and the accompanying prospectus, copies of which may be obtained by sending a request to: Citigroup, c/o Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, NY 11717 or telephone: (800) 831-9146 or Jefferies LLC, Attention: Equity Syndicate Prospectus Department, 520 Madison Avenue, 2nd Floor, New York, NY 10022, by telephone at (877) 821-7388 or by email at prospectus\_department@jefferies.com. Vanda intends to file a final prospectus supplement relating to the offering with the SEC, which will be available along with the accompanying prospectus filed with the SEC in connection with the shelf registration, on the SEC's website at www.sec.gov.

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

**About Vanda Pharmaceuticals Inc.**

Vanda is a global biopharmaceutical pharmaceutical company focused on the development and commercialization of innovative therapies to address high unmet medical needs and improve the lives of patients.

**Cautionary Statement Regarding Forward-Looking Statements**

*This communication includes forward-looking statements regarding events, trends and business prospects, which may affect Vanda's future operating results and financial position. Such statements, including, but not limited to, those regarding statements about Vanda's expectations regarding its fundraising efforts, including the closing of the public offering, the anticipated use of proceeds from the public offering and the underwriters' exercise of their option to purchase additional shares, involve known and unknown risks that relate to Vanda's future events or*

*future financial performance and the actual results could differ materially from those discussed in this communication. Risks and uncertainties that may cause Vanda's actual results to differ materially from those discussed in this communication can be found in the "Risk Factors" section of Vanda's Form 10-K, Forms 10-Q and its other filings with the Securities and Exchange Commission. Readers are cautioned not to place undue reliance on these forward-looking statements that speak only as of the date hereof, and Vanda assumes no responsibility to update or revise any forward-looking statements contained in this communication to reflect events, trends or circumstances after the date of this communication.*

**Company Contact:**

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