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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): February 7, 2018**

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**MEDICINOVA, INC.**  
(Exact name of registrant as specified in its charter)

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

**001-33185**  
(Commission  
File Number)

**33-0927979**  
(IRS Employer  
Identification No.)

**4275 EXECUTIVE SQUARE,  
SUITE 300, LA JOLLA, CA**  
(Address of principal executive offices)

**92037**  
(Zip Code)

**Registrant's telephone number, including area code: (858) 373-1500**

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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 (see General Instruction A.2. below):

- 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 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2). 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 February 7, 2018, MediciNova, Inc., a Delaware corporation (the “Company”), entered into an Underwriting Agreement (the “Underwriting Agreement”) with Ladenburg Thalmann & Co. Inc., acting as representative of the underwriters named in the Underwriting Agreement (the “Underwriters”), relating to the issuance and sale of 4,419,890 shares of the Company’s common stock, par value \$0.001 per share (the “Offering”). The price to the public in the Offering is \$9.05 per share, and the Underwriters have agreed to purchase the shares from the Company pursuant to the Underwriting Agreement at a price of \$8.507 per share. Under the terms of the Underwriting Agreement, the Company has granted the Underwriters an option, exercisable for 30 days, to purchase up to an additional 662,983 shares. The net proceeds to the Company from the Offering are expected to be approximately \$37.4 million, after deducting underwriting discounts and commissions and estimated Offering expenses payable by the Company, assuming no exercise by the Underwriters of its option to purchase additional shares of common stock. The transactions contemplated by the Underwriting Agreement are expected to close on February 12, 2018, subject to the satisfaction of customary closing conditions.

The Offering was made pursuant to the Company’s shelf registration statement on Form S-3, initially filed with the Securities and Exchange Commission (“SEC”) on September 22, 2017, which became effective on October 2, 2017 (File No. 333-220593) and the related prospectus supplement filed with the SEC pursuant to Rule 424(b) under the Securities Act.

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, other obligations of the parties and termination provisions. A copy of the Underwriting Agreement is filed as Exhibit 1.1 to this Current Report and is incorporated herein by reference. The foregoing description of the terms of the Underwriting Agreement is qualified in its entirety by the Underwriting Agreement.

The Underwriting Agreement is attached hereto as an exhibit to provide interested persons with information regarding its terms, but is not intended to provide any other factual information about the Company. The representations, warranties and covenants contained in the Underwriting Agreement were made only for purposes of the Underwriting Agreement as of specific dates indicated therein, were solely for the benefit of the parties to the Underwriting Agreement, and may be subject to limitations agreed upon by the parties, including being qualified by confidential disclosures exchanged between the parties in connection with the execution of the Underwriting Agreement.

The legal opinion, including the related consent, of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP relating to the legality of the issuance and sale of the shares of the Company’s common stock in the Offering is filed as Exhibit 5.1 to this Current Report.

This Current Report contains forward-looking statements that involve risk and uncertainties, such as statements related to the anticipated closing of the Offering and the amount of net proceeds expected from the Offering. The risks and uncertainties involved include the Company’s ability to satisfy certain conditions to closing on a timely basis or at all, as well as other risks detailed from time to time in the Company’s SEC filings.

**Item 8.01. Other Events.**

On February 7, 2018, the Company issued press releases to announce the proposed Offering and to announce that it had priced the Offering. Copies of the press releases are attached hereto as Exhibits 99.1 and 99.2 and are 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 February 7, 2018, between MediciNova, Inc. and Ladenburg Thalmann &amp; Co. Inc.</u></a>
5.1	<a href="#"><u>Opinion and Consent 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 (included in Exhibit 5.1)</u></a>
99.1	<a href="#"><u>Press release issued by MediciNova, Inc. dated February 7, 2018 titled “MediciNova Announces Proposed Underwritten Public Offering of Common Stock”</u></a>
99.2	<a href="#"><u>Press release issued by MediciNova, Inc. dated February 7, 2018 titled “MediciNova Announces Pricing of Underwritten Public Offering of Common Stock”</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.

**MEDICINOVA, INC.**

DATE: February 8, 2018

By: /s/ Ryan Selhorn  
Ryan Selhorn  
Chief Financial Officer

**MEDICINOVA, INC.**  
**4,419,890 Shares of Common Stock**  
**UNDERWRITING AGREEMENT**

February 7, 2018

Ladenburg Thalmann & Co. Inc.  
As Representative of the several underwriters  
listed on Schedule I hereto  
277 Park Avenue  
26th Floor  
New York, NY 10172

Ladies and Gentlemen:

MEDICINOVA, INC., a Delaware corporation (the “**Company**”), proposes to issue and sell to Ladenburg Thalmann & Co. Inc. (the “**Representative**”) and the other underwriters listed on Schedule I hereto (collectively, with the Representative, the “**Underwriters**”), pursuant to and in accordance with the terms and conditions of this underwriting agreement (the “**Agreement**”), an aggregate of 4,419,890 shares (the “**Shares**”) of its common stock, par value \$0.001 per share (the “**Common Stock**”).

It is understood that, subject to the conditions hereinafter stated, an aggregate of 4,419,890 Shares (the “**Firm Shares**”) will be sold to the Underwriters in connection with the public offering (the “**Offering**”) and sale of such Firm Shares. In addition, as set forth below, the Company proposes to issue and sell to the Underwriters, upon the terms and conditions set forth in Section 3 hereof, an aggregate of up to 662,983 additional Shares (the “**Optional Shares**”). The Firm Shares and the Optional Shares are sometimes collectively referred to herein as the “**Securities**.”

This is to confirm the agreement concerning the purchase of the Securities from the Company by the Underwriters.

**1. Representations and Warranties of the Company.** The Company represents and warrants to, and agrees with, the Underwriters that:

(a) The Company has prepared and filed with the Securities and Exchange Commission (the “**Commission**”) in conformity in all material respects with the Securities Act of 1933, as amended (the “**Securities Act**”), and the rules and regulations promulgated thereunder (the “**Rules and Regulations**”) a “shelf” Registration Statement (as defined below) on Form S-3 (File No. 333-220593), which became effective on October 2, 2017 (the “**Effective Date**”), including a base prospectus dated October 2, 2017 and filed on September 22, 2017, to be used in connection with the sale of the Securities (the “**Base Prospectus**”). The term “Registration Statement” as used in this Agreement means the Registration Statement (including all exhibits, financial schedules and all documents and information deemed to be a part of the Registration Statement pursuant to Rule 430B of the Rules and Regulations), as amended and/or supplemented to the date of this Agreement, including the Base Prospectus. The Registration Statement has been declared effective by the Commission under the Securities Act and no stop order preventing or suspending the effectiveness of the Registration Statement or suspending or preventing the use of the Prospectus (as defined below) has been issued by the Commission and no proceedings for that purpose have been instituted or are pending or, to the best knowledge of the Company, are contemplated or threatened by the Commission. A prospectus supplement reflecting the terms of the Securities and the terms of the Offering and the other matters set forth therein has been prepared or will be prepared by the Company and will be filed by the Company with the Commission pursuant to Rule 424(b) of the Rules and Regulations. Such prospectus supplement, in the form first filed pursuant to Rule 424(b) of the Rules and Regulations after the date and time that this Agreement is executed and delivered by the parties hereto (the “**Execution Time**”), is referred to herein as the “**Prospectus Supplement**”). The term

“Prospectus” as used in this Agreement means the Base Prospectus as supplemented by the Prospectus Supplement, in the form in which it is to be filed with the Commission pursuant to Rule 424(b) of the Rules and Regulations, except that if any revised prospectus or prospectus supplement shall be provided to the Underwriters by the Company for use in connection with the offering and sale of the Securities which differs from the Prospectus (whether or not such revised prospectus or prospectus supplement is required to be filed by the Company pursuant to Rule 424(b) of the Rules and Regulations), the term “**Prospectus**” shall refer to such revised prospectus or prospectus supplement, as the case may be, from and after the time it is first provided to the Underwriters (or in the form first made available to the Underwriters by the Company to meet requests of prospective purchasers pursuant to Rule 173 under the Securities Act) for such use. Any preliminary prospectus, preliminary prospectus supplement or prospectus subject to completion included in the Registration Statement or filed with the Commission pursuant to Rule 424 of the Rules and Regulations is hereafter called a “**Preliminary Prospectus**.” If the Company has filed or does file an abbreviated registration statement to register additional securities pursuant to Rule 462(b) under the Rules and Regulations (the “**Rule 462(b) Registration Statement**”), then any reference herein to the Registration Statement from and after the date and time of filing of the Rule 462(b) Registration Statement shall also be deemed to include such Rule 462(b) Registration Statement. Any reference herein to the Registration Statement, any Preliminary Prospectus or the 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 Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), on or before the last to occur of the Effective Date, the date of the Preliminary Prospectus, or the date of the Prospectus, and any reference herein to the terms “**amend**,” “**amendment**,” or “**supplement**” with respect to the Registration Statement, any Preliminary Prospectus or the Prospectus shall be deemed to refer to and include (i) the filing of any document under the Exchange Act after the Effective Date, the date of such Preliminary Prospectus or the date of the Prospectus, as the case may be, which is incorporated by reference and (ii) any such document so filed.

The conditions to the use of Form S-3 in connection with the offering and sale of the Securities as contemplated hereby have been satisfied. The Registration Statement meets, and the offering and sale of the Securities as contemplated hereby complies with, the requirements of Rule 415 under the Securities Act (including, without limitation, Rule 415(a)(4) and (a)(5) of the Rules and Regulations).

The final Preliminary Prospectus included in the Disclosure Package (as defined below) and the Prospectus when filed complied with or will comply, in all material respects with the Securities Act and the Rules and Regulations and, if filed by electronic transmission pursuant to EDGAR (except as may be permitted by Regulation S-T under the Securities Act), was identical to the copy thereof delivered to the Underwriters for use in connection with the offer and sale of the Securities. Each of the Registration Statement, any Rule 462(b) Registration Statement and any post-effective amendment thereto, at the time it became effective, and at each Closing Date (as defined below), complied and will comply in all material respects with the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. The Prospectus (including any Prospectus wrapper), as amended or supplemented, as of its date and at the date hereof, the Closing Date and any Option Closing Date (as defined below), did not and will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the two immediately preceding sentences do not apply to statements in or omissions from the Registration Statement, any Rule 462(b) Registration Statement, or any post-effective amendment thereto, or the Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with information relating to the Underwriters furnished to the Company in writing by the Underwriters expressly for use therein, it being understood and agreed that the only such information furnished by the Underwriters consists of the information described as such in Section 12 hereof. The documents incorporated by reference in the Registration Statement, the Preliminary Prospectus and the Prospectus, when they became effective or were filed with the Commission, as the case may be, conformed in all material respects to the requirements of the Securities Act or the Exchange Act, as applicable, and the rules and regulations of the Commission thereunder, and none of such documents contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

(b) There are no contracts or other documents required to be described in the Prospectus or to be filed as exhibits to the Registration Statement which have not been described or filed as required. Each agreement to which the Company is a party (i) that is referred to in the Registration Statement or filed as an exhibit thereto, and (ii) is material to the Company's business (each, a "**Material Contract**"), has been duly and validly executed by the Company, is in full force and effect in all material respects and is enforceable against the Company, except (A) as such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting the rights and remedies of creditors generally, (B) as enforceability of indemnification or contribution provisions may be limited under the federal and state securities laws, and (C) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to equitable defenses and to the discretion of the court before which any proceeding may be brought. The Company has not assigned any of its rights under any Material Contract. The Company is not in breach or default under any Material Contract and, to the Company's knowledge, no event has occurred that, with the giving of notice or lapse of time, or both, would constitute a breach or default by the Company or any other party under any Material Contract. The Company is not aware of any other party to a Material Contract being in breach or default thereunder. The Company is not aware that any Material Contract is unenforceable against any other party thereto (except for the limitations on enforceability set forth in clauses (A), (B) and (C) of this paragraph).

(c) The term "**Disclosure Package**" shall mean, collectively, (i) the Preliminary Prospectus that is included in the Registration Statement immediately prior to the Initial Sale Time (as defined below), if any, as amended or supplemented, (ii) any issuer free writing prospectuses as defined in Rule 433 of the Securities Act (each, an "**Issuer Free Writing Prospectus**") identified in Schedule II hereto, and (iii) any other free writing prospectus that the parties hereto shall hereafter expressly agree in writing to treat as part of the Disclosure Package. As of 6:30 pm (Eastern time) on the date of this Agreement (the "**Initial Sale Time**"), the Disclosure Package did 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 the Underwriters specifically for use therein, it being understood and agreed that the only such information furnished by the Underwriters consists of the information described as such in Section 12 hereof.

(d) Each Issuer Free Writing Prospectus, as of its issue date and at all subsequent times through the completion of the Offering or until any earlier date that the Company notified or notifies the Underwriters as described in the next sentence, did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement. If at any time following issuance of an Issuer Free Writing Prospectus there occurred or occurs an event or development as a result of which such Issuer Free Writing Prospectus conflicted or would conflict with the information then contained in the Registration Statement or as a result of which such Issuer Free Writing Prospectus, if republished immediately following such event or development, would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading, (i) the Company has promptly notified or will promptly notify the Underwriters and (ii) the Company has promptly amended or will promptly amend or supplement such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission. This subsection (d) 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 the Underwriters specifically for use therein, it being understood and agreed that the only such information furnished by the Underwriters consists of the information described as such in Section 12 hereof.

(e) The Company has delivered to the Underwriters one complete manually signed copy of the Registration Statement and of each consent and certificate of experts filed as a part thereof, and conformed copies of the Registration Statement (without exhibits) and preliminary prospectuses and the Prospectus, as amended or supplemented, in such quantities and at such places as the Underwriters have reasonably requested.

(f) The Company has not distributed and will not distribute, directly or indirectly, prior to the later of the Option Closing Date and the completion of the Underwriters' distribution of the Securities, any offering material in connection with the offering and sale of the Securities other than any Preliminary Prospectus, the Prospectus, any Issuer Free Writing Prospectus reviewed and consented to by the Underwriters or included in Schedule II hereto, or the Registration Statement.

(g) Each of BDO USA, LLP (“**BDO**”) and Ernst & Young LLP (“**E&Y**”), whose reports appear or are incorporated in the Registration Statement and are included or incorporated by reference in the Disclosure Package and the Prospectus, are independent registered public accountants as required by the Securities Act and the Rules and Regulations and the Public Company Accounting Oversight Board (including the rules and regulations promulgated by such entity, the “**PCAOB**”). To the knowledge of the Company, each of BDO and E&Y is duly registered and in good standing with the PCAOB. Neither BDO nor E&Y has, during the periods covered by the financial statements audited and reported on by BDO and E&Y, as applicable, and included in the Registration Statement and in the Disclosure Package and Prospectus, provided to the Company any non-audit services, as such term is defined in Section 10A(g) of the Exchange Act. The financial statements and schedules (including the related notes) included or incorporated by reference in the Registration Statement, and included or incorporated by reference in the Disclosure Package and the Prospectus, present fairly the financial condition, the results of the operations and changes in financial condition of the entities purported to be shown thereby at the dates or for the periods indicated and have been prepared in accordance with generally accepted accounting principles applied on a consistent basis throughout the periods indicated. All adjustments necessary for a fair presentation of results for such periods have been made. The selected financial, operating and statistical data, if any, set forth or incorporated by reference in any Preliminary Prospectus included in the Disclosure Package and the Prospectus fairly present, when read in conjunction with the Company’s financial statements and the related notes and schedules and on the basis stated in the Registration Statement, the information set forth therein.

(h) Each of the Company and its subsidiaries (“**Subsidiaries**”) has been duly organized and is validly existing as a corporation in good standing under the laws of the jurisdiction of its organization, with full power and authority (corporate and other) to own or lease its properties and conduct its business as described in the Disclosure Package and Prospectus, and is duly qualified to do business and is in good standing as a foreign corporation in each jurisdiction in which the character of the business conducted by it or the location of the properties owned or leased by it makes such qualification necessary; each of the Company and its Subsidiaries is in possession of and operating in compliance with all franchises, grants, authorizations, licenses, permits, easements, consents, certificates and orders required for the conduct of its business, all of which are valid and in full force and effect (except where any failure to do so would not result in a material adverse change in the condition (financial or otherwise), business, properties or results of operations of the Company or any of its Subsidiaries (“**Material Adverse Effect**”)); and neither the Company nor any of its Subsidiaries has received any notice of proceedings relating to the revocation or modification of any such franchise, grant, authorization, license, permit, easement, consent, certificate or order which, individually or in the aggregate, if the subject of an unfavorable decision, would result, individually or in the aggregate, in having a Material Adverse Effect.

(i) The capitalization of the Company is as set forth under the caption “Capitalization” in the Disclosure Package and Prospectus, and the Common Stock conforms to the description thereof contained under the caption Description of Capital Stock – Common Stock” in the Disclosure Package and Prospectus; the outstanding shares of capital stock of the Company and each Subsidiary of the Company have been duly authorized, validly issued, fully paid and nonassessable and have been issued in compliance with federal and state securities laws. There are no preemptive rights or other rights to subscribe for or to purchase, or any restriction upon the voting or transfer of, any shares of capital stock pursuant to the Company’s certificate of incorporation, bylaws or other governing documents or any agreement or other instrument to which the Company or any of its Subsidiaries is a party or by which any of them may be bound other than those accurately described in the Disclosure Package and the Prospectus. None of the outstanding shares of capital 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. There are no authorized or outstanding options, warrants, preemptive rights, rights of first refusal or other rights to purchase, or equity or debt securities convertible into or exchangeable or exercisable for, any capital stock of the Company or any Subsidiary of the Company other than those accurately described in the Disclosure Package and the Prospectus. The description of the Company’s stock option, stock bonus and other stock plans or arrangements, and the options or other rights granted thereunder, set forth or incorporated by reference in the Disclosure Package and the Prospectus accurately and fairly presents the information required to be shown with respect to such plans, arrangements, options and rights in all material respects. Neither the filing of the Registration Statement nor the offering or sale of the Securities as contemplated by this Agreement gives rise to any rights, other than those which have been waived or satisfied, for or relating to the registration of any shares of Common Stock or other securities. All of the outstanding shares of capital stock of each Subsidiary of the Company are owned directly or indirectly by the Company, free and clear of any claim, lien, encumbrance or security interest, other than any claim, lien, encumbrance or security interest in connection with any loan to the Company by one or more banking institutions.



(j) Subsequent to the respective dates as of which information is given in the Disclosure Package and the Prospectus, and except as described or contemplated in the Disclosure Package and Prospectus or otherwise disclosed to the Underwriters in writing: (i) neither the Company nor any of its Subsidiaries has incurred any liabilities or obligations, direct or contingent, nor entered into any transactions not in the ordinary course of business, which in either case are material to the Company or such Subsidiary, as the case may be; (ii) there has not been any Material Adverse Effect; and (iii) there has been no dividend or distribution of any kind declared, paid or made by the Company on any class of its capital stock.

(k) Except as would not have a Material Adverse Effect, neither the Company nor any of its Subsidiaries is, or with the giving of notice or lapse of time or both would be, in violation of or in default under, nor will the consummation of the transactions contemplated hereby result in a violation of, or constitute a default under, the certificate of incorporation, bylaws or other governing documents of the Company or any of its Subsidiaries, or any agreement, contract, mortgage, deed of trust, loan agreement, note, lease, indenture or other instrument, to which the Company or any of its Subsidiaries is a party or by which any of them is bound, or to which any of their properties is subject, nor will the performance by the Company of its obligations hereunder violate any law, rule, administrative regulation or decree of any court, or any governmental agency or body having jurisdiction over the Company, its Subsidiaries or any of their properties, or result in the creation or imposition of any lien, charge, claim or encumbrance upon any property or asset of the Company or any of its Subsidiaries. Except for permits and similar authorizations required under the Securities Act and the securities or "Blue Sky" laws of certain jurisdictions, if applicable, and for such permits and authorizations which have been obtained, no consent, approval, authorization or order of any court, governmental agency or body or financial institution is required in connection with the consummation of the transactions contemplated by this Agreement.

(l) This Agreement has been duly authorized, executed and delivered by the Company and constitutes a legal, valid and binding obligation of the Company and is enforceable against the Company in accordance with its terms, except for the limitations on enforceability set forth in clauses (A), (B) and (C) of paragraph 1(b) hereto.

(m) The Securities to be purchased by the Underwriters from the Company have been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company pursuant to this Agreement, will be validly issued, fully paid and nonassessable. The issuance of the Securities pursuant to this Agreement will not be subject to any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase securities of the Company. There are no restrictions upon the voting or transfer of the Securities under the Company's certificate of incorporation or bylaws or any agreement or other instrument to which the Company is a party or otherwise filed as an exhibit to the Registration Statement.

(n) The Company and its Subsidiaries have good and marketable title in fee simple to all items of real property owned by them and good and marketable title to all personal property owned by them, in each case clear of all liens, claims, encumbrances and defects except such as are described in the Disclosure Package and Prospectus or such as do not materially affect the value of such property and do not interfere with the use made or proposed to be made of such property by the Company or such Subsidiaries; and any real property and buildings held under lease by the Company and its Subsidiaries are held by them under valid, existing and enforceable leases with such exceptions as are not material and do not interfere with the use made or proposed to be made of such property and buildings by the Company or such Subsidiaries.

(o) Except as fully described in the Disclosure Package and Prospectus, there is no litigation or governmental proceeding to which the Company or any of its Subsidiaries is a party or to which any property of the Company or any of its Subsidiaries is subject or which is pending or, to the knowledge of the Company, threatened against the Company which individually or in the aggregate could result in any Material Adverse Effect, which would materially and adversely affect the consummation of this Agreement or the transactions contemplated hereby or which is required to be disclosed in the Disclosure Package and Prospectus.

(p) Neither the Company nor any Subsidiary is in violation of any law, ordinance, governmental rule or regulation or court decree to which it may be subject which violation could have a Material Adverse Effect.

- (q) The Company has not taken and may not take, directly or indirectly, any action designed to cause or result in, or which has constituted or which might reasonably be expected to constitute, the stabilization or manipulation of the price of the shares of Common Stock to facilitate the sale or resale of any of the Securities.
- (r) Neither the Company nor any of its affiliates has, prior to the date hereof, made any offer or sale of any securities which are required to be “integrated” pursuant to the Securities Act or the Rules and Regulations with the offer and sale of the Securities pursuant to the Registration Statement and the Prospectus.
- (s) The Company and its Subsidiaries have filed all necessary federal, state and foreign income and franchise tax returns, and all such tax returns are complete and correct in all material respects, and the Company and its Subsidiaries have not failed to pay any taxes which were payable pursuant to said returns or any assessments with respect thereto. The Company has no knowledge of any tax deficiency which has been or is likely to be threatened or asserted against the Company or its Subsidiaries.
- (t) The Company maintains a system of internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management’s general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles in the United States and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management’s general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as disclosed in the Disclosure Package and the Prospectus, neither the Company’s board of directors nor the audit committee has been informed, nor is any director of the Company aware, of: (i) any significant deficiencies or material weaknesses in the design or operation of internal control over financial reporting which could adversely affect the Company’s ability to record, process, summarize and report financial information; or (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal control over financial reporting. Except as disclosed in the Disclosure Package and the Prospectus, since the date of the most recent evaluation of such system of internal accounting controls, there has been no material change in internal control over financial reporting, including any corrective actions with regard to significant deficiencies or material weaknesses. The Company has established and maintains disclosure controls and procedures (as defined in Rule 13a-15 under the Exchange Act). Such disclosure controls and procedures are designed to ensure that material information relating to the Company is made known to the Company’s principal executive officer and its principal financial officer, particularly during the periods in which the periodic reports required under the Exchange Act are being prepared. Such disclosure controls and procedures are effective in timely alerting the Company’s principal executive officer and principal financial officer to material information required to be included in the Company’s periodic reports required under the Exchange Act.
- (u) The Company and its Subsidiaries maintain insurance of the types and in the amounts generally deemed adequate for its business, including, but not limited to, directors’ and officers’ insurance, product liability insurance, insurance for injuries or liabilities arising in connection with clinical trials, and insurance covering real and personal property owned or leased by the Company and its Subsidiaries against theft, damage, destruction, acts of vandalism and all other risks customarily insured against, all of which insurance is in full force and effect. The Company has not been refused any insurance coverage sought or applied for, and the Company has no reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not have a Material Adverse Effect.
- (v) Neither the Company nor any of its Subsidiaries nor, to the best of the Company’s knowledge, any of its employees or agents has at any time during the last five years (i) made any unlawful contribution to any candidate for foreign office, or failed to disclose fully any contribution in violation of law, or (ii) made any payment to any foreign, federal or state governmental officer or official or other person charged with similar public or quasi-public duties, other than payments required or permitted by the laws of the United States or any jurisdiction thereof.
- (w) The Company is not and, after giving effect to the offering and sale of the Securities and the application of the proceeds thereof as described under the caption “Use of Proceeds” in the Disclosure Package or the Prospectus, will not be an “investment company” as defined in the Investment Company Act of 1940, as amended.

(x) Except as disclosed in the Disclosure Package or the Prospectus, there are no contracts, agreements or understandings between the Company and any person that would give rise to a valid claim against the Company or the Underwriters for a brokerage commission, finder's fee or other like payment in connection with the Offering.

(y) Except as disclosed in the Disclosure Package or the Prospectus, there are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company to file a registration statement under the Securities Act with respect to any securities of the Company owned or to be owned by such person or to require the Company to include such securities in the securities registered pursuant to a Registration Statement or in any securities being registered pursuant to any other registration statement filed by the Company under the Securities Act.

(z) The Common Stock is listed on the Nasdaq Global Market ("**Nasdaq**"). The Company is currently in compliance with all continued listing standards and corporate governance standards of Nasdaq and the Company has no knowledge of any proceeding intended to suspend or terminate listing of its Common Stock on Nasdaq. The Common Stock has been registered under Section 12(b) of the Exchange Act.

(aa) The Company is in material compliance with all applicable provision of the Sarbanes-Oxley Act of 2002 that are currently effective and the rules and regulations promulgated in connection therewith.

(bb) No consent, approval, authorization, or order of, or filing with, any governmental agency or body or any court is required for the consummation of the transactions contemplated by this Agreement in connection with the issuance and sale of the Securities by the Company, except such as have been obtained and made under the Securities Act and such as may be required by the Financial Industry Regulatory Authority ("**FINRA**") or under state securities laws or the laws of any foreign jurisdiction.

(cc) The execution, delivery and performance of this Agreement and the issuance and sale of the Securities will not result in a breach or violation of any of the terms and provisions of, or constitute a default under, (i) any statute, any rule, regulation or order of any governmental agency or body or any court, domestic or foreign, having jurisdiction over the Company, except in the case of this clause (i) for such breaches, violations or defaults which would not, individually or in the aggregate, have a Material Adverse Effect or (ii) any agreement or instrument to which the Company is a party or by which the Company is bound, except in the case of this clause (ii) for such breaches, violations or defaults which would not, individually or in the aggregate, have a Material Adverse Effect, or (iii) the charter or bylaws of the Company, and the Company has full power and authority to authorize, issue and sell the Securities as contemplated by this Agreement.

(dd) The Company is not presently doing business with the government of Cuba or with any person or affiliate located in Cuba.

(ee) No labor dispute with the employees of the Company or any Subsidiary exists or, to the knowledge of the Company, is imminent that might have a Material Adverse Effect.

(ff) The Company and its Subsidiaries own or possess the right to use sufficient trademarks, trade names, patent rights, copyrights, domain names, licenses, approvals, trade secrets, inventions, technology, know-how and other similar rights (collectively, "**Intellectual Property Rights**") as are (i) necessary or material to conduct its business as now conducted and as described in the Disclosure Package and the Prospectus and as are (ii) necessary or material for the commercialization of the products described in the Disclosure Package and the Prospectus as being under development. Except as set forth in the Disclosure Package and the Prospectus, (a) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding, or claim by others challenging the rights of the Company or any of its Subsidiaries in or to any such Intellectual Property Rights that, if decided adversely to the Company would, individually or in the aggregate, have a Material Adverse Effect, and the Company is unaware of any facts which would form a reasonable basis for any such claim; (b) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding, or claim by others that the Company or any of its Subsidiaries infringes, misappropriates, or otherwise violates any Intellectual Property Rights, of others that, if decided adversely to the Company would, individually or in the aggregate, have a Material Adverse Effect, and the Company is unaware of any facts which would form a reasonable basis for any such claim; (c) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding, or claim by others challenging the validity, scope, or

enforceability of any such Intellectual Property Rights owned by or licensed to the Company or its Subsidiaries and the Company is unaware of any facts which would form a reasonable basis for any such claim; (d) to the Company's knowledge, the operation of the business of the Company and its Subsidiaries as now conducted, and as described in the Disclosure Package and the Prospectus, and in connection with the development and commercialization of the products described in the Disclosure Package and the Prospectus does not infringe any claim of any patent or published patent application; (e) there is no prior art of which the Company is aware that may render any patent owned or licensed by the Company or its Subsidiaries invalid or any patent application owned or licensed by the Company unpatentable which has not been disclosed to the applicable government patent office; and (f) the Company's granted or issued patents, registered trademarks, and registered copyrights have been duly maintained and are in full force and in effect, and none of the patents, trademarks and copyrights have been adjudged invalid or unenforceable in whole or in part. Neither the Company nor any of its Subsidiaries is a party to or bound by any options, licenses or agreements with respect to the Intellectual Property Rights of any other person or entity that are required to be set forth in the Disclosure Package and the Prospectus and are not described therein in all material respects. None of the technology or intellectual property used by the Company and its Subsidiaries in its business has been obtained or is being used by the Company or its Subsidiaries in violation of any contractual obligation binding on the Company or its Subsidiaries, or, to the Company's knowledge, any of its officers, directors, or employees or otherwise in violation of the rights of any persons. No third party has been granted by the Company or its Subsidiaries rights to the Intellectual Property Rights of the Company or its Subsidiaries that, if exercised, could enable such party to develop products competitive to those of the Company as described in the Disclosure Package and the Prospectus.

(gg) The Company has duly and properly filed or caused to be filed with the U.S. Patent and Trademark Office (the "**PTO**") and applicable foreign and international patent and trademark authorities all patents, trademarks, copyrights and applications relating to the same owned by the Company and its Subsidiaries (the "**Company Patent and Trademark Applications**"). To the knowledge of the Company, the Company has complied with the PTO's duty of candor and disclosure for the Company Patent and Trademark Applications and has made no material misrepresentation in the Company Patent and Trademark Applications. To the Company's knowledge, the Company Patent and Trademark Applications disclose patentable subject matter. The Company has not been notified of any inventorship challenges nor has any interference been declared or provoked nor is any material fact known by the Company that would preclude the issuance of patents with respect to the Company Patent and Trademark Applications or would render such patents, if issued, invalid or unenforceable.

(hh) Except as would not have a Material Adverse Effect, neither the Company or any of its Subsidiaries has breached and is currently in breach of any provision of any license, contract or other agreement governing the use by the Company or its Subsidiaries of Intellectual Property Rights owned by third parties (collectively, the "**Licenses**") and no third party has alleged any such breach and the Company is unaware of any facts that would form a reasonable basis for such a claim. To the Company's knowledge, no other party to the Licenses has breached or is currently in breach of any provision of the Licenses. Each of the Licenses is in full force and effect and constitutes a valid and binding agreement between the parties thereto, enforceable against the Company, and to the knowledge of the Company, the other parties thereto, in accordance with its terms, and there has not occurred any breach or default under any such Licenses or any event that with the giving of notice or lapse of time would constitute a breach or default thereunder. Except as would not have a Material Adverse Effect, neither the Company nor any of its Subsidiaries has been and is currently involved in any disputes regarding the Licenses. To the Company's knowledge, all patents licensed to the Company pursuant to the Licenses are valid, enforceable and being duly maintained. To the Company's knowledge, all patent applications licensed to the Company pursuant to the Licenses are being duly prosecuted.

(ii) Except as described in the Disclosure Package and the Prospectus, the Company and its subsidiaries: (A) are and at all times have been in full compliance with all statutes, rules, regulations, or guidance that are necessary for the ownership of their respective properties and the conduct of their respective businesses (including, without limitation, those administered by the Food & Drug Administration of the U.S. Department of Health and Human Services (the "**FDA**") or by any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA) as described in the Disclosure Package and the Prospectus ("**Applicable Laws**"), except as could not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect; (B) have not received any notice of adverse finding, warning letter, untitled letter or other correspondence or notice from the FDA or any other federal, state or foreign governmental authority having authority over the Company or its

activities (“**Governmental Authority**”) alleging or asserting noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws (“**Authorizations**”); (C) possess all material Authorizations necessary to conduct their respective businesses as described in the Disclosure Package and the Prospectus and such Authorizations are valid and in full force and effect and are not in violation of any term of any such Authorizations; (D) have not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any Governmental Authority or third party alleging that any product, operation or activity is in violation of any Applicable Laws or Authorizations and have no knowledge that any such Governmental Authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (E) have not received notice that any Governmental Authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations and the Company has no knowledge that any such Governmental Authority is considering such action; and (F) have filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and correct in all material respects on the date filed (or were corrected or supplemented by a subsequent submission).

(jj) The clinical trials conducted by or on behalf of or sponsored by the Company or any of its Subsidiaries or in which any of their respective product candidates have participated that are described in, or the results of which are referred to in, the Disclosure Package and the Prospectus were and, if still pending, are, being conducted in all material respects in accordance any Applicable Laws, as well as with medical and scientific research procedures that the Company reasonably believes are appropriate and are generally consistent with industry standards. The descriptions in the Disclosure Package and the Prospectus of the results of such clinical trials are, in all material respects, accurate and complete. Except to the extent disclosed in the Disclosure Package and the Prospectus, neither the Company nor any of its Subsidiaries has received any notices or other correspondence from the FDA or any other Governmental Authority requiring the termination, suspension or material modification of any clinical trials that are described in, or the results of which are referred to in, the Disclosure Package and the Prospectus.

(kk) No relationship, direct or indirect, exists between or among any of the Company or any Affiliate of the Company, on the one hand, and any director, officer, stockholder, customer or supplier of the Company or any Affiliate of the Company, on the other hand, which is required by the Securities Act, the Exchange Act or the Rules and Regulations to be described in the Registration Statement or the Prospectus which is not so described as required.

(ll) Except as would not, individually or in the aggregate, result in a Material Adverse Effect (i) neither the Company nor any of its Subsidiaries is in violation of any federal, state, local or foreign law or regulation relating to pollution or protection of human health or the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including without limitation, laws and regulations relating to emissions, discharges, releases or threatened releases of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum and petroleum products (collectively, “**Materials of Environmental Concern**”), or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Materials of Environmental Concern (collectively, “**Environmental Laws**”), which violation includes, but is not limited to, noncompliance with any permits or other governmental authorizations required for the operation of the business of the Company or any of its Subsidiaries under applicable Environmental Laws, or noncompliance with the terms and conditions thereof, nor has the Company or any of its Subsidiaries received any written communication, whether from a Governmental Authority, citizens group, employee or otherwise, that alleges that the Company or any of its Subsidiaries is in violation of any Environmental Law; (ii) there is no claim, action or cause of action filed with a court or Governmental Authority, no investigation with respect to which the Company or any of its Subsidiaries has received written notice, and no written notice by any person or entity alleging potential liability for investigatory costs, cleanup costs, governmental responses costs, natural resources damages, property damages, personal injuries, attorneys’ fees or penalties arising out of, based on or resulting from the presence, or release into the environment, of any Material of Environmental Concern at any location owned, leased or operated by the Company or any of its Subsidiaries, now or in the past (collectively, “**Environmental Claims**”), pending or, to the best of the Company’s knowledge, threatened against the Company, any of its Subsidiaries, or any person or entity whose liability for any Environmental Claim the Company or any of its Subsidiaries has retained or assumed either contractually or by operation of law; and (iii) to the Company’s

knowledge, there are no past or present actions, activities, circumstances, conditions, events or incidents, including, without limitation, the release, emission, discharge, presence or disposal of any Material of Environmental Concern, that reasonably could result in a violation of any Environmental Law or form the basis of a potential Environmental Claim against the Company, any of its Subsidiaries, or against any person or entity whose liability for any Environmental Claim the Company or any of its Subsidiaries has retained or assumed either contractually or by operation of law.

(mm) The Company and its Subsidiaries: (A) are in compliance, in all material respects, with any and all applicable foreign, federal, state and local laws, rules, regulations, treaties, statutes and codes promulgated by any and all governmental authorities (including pursuant to the Occupational Health and Safety Act) relating to the protection of human health and safety in the workplace (“**Occupational Laws**”); (B) have received all material permits, licenses or other approvals required of it under applicable Occupational Laws to conduct their respective businesses as currently conducted; and (C) are in compliance, in all material respects, with all terms and conditions of such permit, license or approval. No action, proceeding, revocation proceeding, writ, injunction or claim is pending or, to the Company’s knowledge, threatened against the Company or any of its Subsidiaries relating to Occupational Laws, and the Company does not have knowledge of any facts, circumstances or developments relating to its operations or practices that could reasonably be expected to form the basis for or give rise to such actions, suits, investigations or proceedings.

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

(oo) There are no outstanding loans, advances (except normal advances for business expenses in the ordinary course of business) or guarantees of indebtedness by the Company to or for the benefit of any of the officers or directors of the Company or any of the family members of any of them, except as disclosed in the Disclosure Package and the Prospectus.

(pp) The market data and industry forecasts included in the Disclosure Package and the Prospectus were obtained or derived from industry publications that are not and were not at any time under the Company’s control and which the Company reasonably and in good faith believes are reliable and accurate, and such data agree with the sources from which they are derived.

(qq) Except as disclosed in the Disclosure Package or the Prospectus, since the date of the latest audited financial statements included in the Disclosure Package or the Prospectus there has been no Material Adverse Effect, nor any development or event involving a prospective Material Adverse Effect, in the condition (financial or otherwise), business, properties, or results of operations of the Company and its Subsidiaries taken as a whole.

(rr) To the Company’s knowledge, no director or officer of the Company or any of its Subsidiaries is subject to any non-competition agreement or non-solicitation agreement with any employer or prior employer which could materially affect each director’s or officer’s ability to be and act in the capacity of a director or officer of the Company or a Subsidiary.

(ss) The Company has not offered, or caused the Underwriters to offer, the Securities to any person or entity with the intention of unlawfully influencing: (i) a customer or supplier of the Company or any Subsidiary to alter the customer's or supplier's level or type of business with the Company or any Subsidiary or (ii) a journalist or publication to write or publish favorable information about the Company, any Subsidiary or its products or services.

(tt) The operations of the Company and its Subsidiaries are and have been conducted at all times in material compliance with applicable financial record keeping and reporting requirements and money laundering statutes of the United States and, to the Company's knowledge, all other jurisdictions to which the Company and its Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any applicable 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.

(uu) All "non-GAAP financial measures" (as defined in the Rules and Regulations) included in the Disclosure Package or the Prospectus comply with the requirements of Regulation G and Item 10 of Regulation S-K under the Rules and Regulations.

(vv) Except as described in the Disclosure Package and the Prospectus, there are no claims, payments, arrangements, agreements or understandings relating to the payment of a finder's, consulting or origination fee by the Company or, to the knowledge of the Company, any officer, director or stockholder of the Company with respect to the sale of the Securities hereunder or any other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its stockholders that may affect the Underwriters' compensation, as determined by FINRA. Except as described in the Disclosure Package and the Prospectus, the Company has not made any direct or indirect payments (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the 180 days prior to the commencement of the Offering. None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein. To the Company's knowledge, no officer, director or any beneficial owner of 1% or more of the Company's securities (whether debt or equity, registered or unregistered, regardless of the time acquired or the source from which derived) (any such individual or entity, a "**Company Affiliate**") has any direct or indirect affiliation or association with any FINRA member (as determined in accordance with the rules and regulations of FINRA); no Company Affiliate is an owner of stock or other securities of any member of FINRA (other than securities purchased on the open market); no Company Affiliate has made a subordinated loan to any member of FINRA; no proceeds from the sale of Securities (excluding underwriting compensation as disclosed in the Disclosure Package and the Prospectus) will be paid to any FINRA member, or any persons associated with or affiliated with any member of FINRA. Except as disclosed in the Disclosure Package and the Prospectus, the Company has not issued any warrants or other securities or granted any options, directly or indirectly, to anyone who is a potential Underwriter in the Offering or a related person (as defined by FINRA rules) of such an Underwriter within the 180-day period prior to the commencement of the Offering; to the Company's knowledge, no person to whom securities of the Company have been privately issued within the 180-day period prior to the commencement of the Offering has any relationship or affiliation or association with any member of FINRA and no FINRA member participating in the Offering has a conflict of interest with the Company. For this purpose, a "conflict of interest" exists when a member of FINRA and/or its associated persons, parent or affiliates in the aggregate beneficially own 10% or more of the Company's outstanding subordinated debt or common equity, or 10% or more of the Company's preferred equity. "**FINRA member participating in the Offering**" includes any associated person of a FINRA member that is participating in the Offering, any member of such associated person's immediate family and any affiliate of a FINRA member that is participating in the Offering. There is no conflict of interest between the Company and the Underwriters under FINRA Rule 5121.

(ww) The Company meets the requirements for use of Form S-3 under the Securities Act specified in FINRA Conduct Rule 5110(B)(7)(C)(i) and satisfies the pre-October 21, 1992 eligibility requirements for the use of a registration statement on Form S-3 in connection with the offering of the Securities, including, without limitation: (i) having a non-affiliate, public common equity float of at least \$150 million as of a date within 60 days of the date of this Agreement and (ii) having been subject to the Exchange Act reporting requirements for a period of at least 36 months.

Any certificate signed by an officer of the Company and delivered to the Underwriters or to counsel for the Underwriters shall be deemed to be a representation and warranty by the Company to the Underwriters as to the matters set forth therein.

The Company acknowledges that the Underwriters and, for purposes of the opinions to be delivered pursuant to Section 6 hereof, counsel to the Company and to the Underwriters, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

**2. Representations and Warranties of the Underwriters.** Each of the Underwriters, severally and not jointly, represents and agrees as to itself that:

(a) It has not and will not use, authorize use of, refer to, or participate in the planning for use of, any “free writing prospectus”, as defined in Rule 405 under the Securities Act (which term includes use of any written information furnished to the Commission by the Company and not incorporated by reference into the Registration Statement and any press release issued by the Company) other than (i) any Issuer Free Writing Prospectus, or (ii) any other free writing prospectus that the parties hereto shall hereafter expressly agree in writing to treat as part of the Disclosure Package.

(b) It will retain copies of each free writing prospectus used or referred to by it to the extent required by Rule 433 under the Securities Act.

**3. Purchase of the Securities by the Underwriters.**

(a) Subject to the terms and conditions and upon the basis of the representations, warranties and agreements herein set forth, the Company agrees to issue and sell to the Underwriters, and each of the Underwriters agrees, severally and not jointly, to purchase at a price of \$8.507 per Share (which gives effect to a 6% discount), the number of Firm Shares set forth opposite such Underwriter’s name in Schedule I hereto. Each of the Underwriters agrees, severally and not jointly, to offer the Firm Shares to the public as set forth in the Prospectus.

(b) The Company hereby grants to the Underwriters and its designees an option to purchase from the Company, solely for the purpose of covering over-allotments in connection with the distribution and sale of the Firm Shares, all or any portion of the Optional Shares for a period of thirty (30) days from the date of the Prospectus at the purchase price per Share set forth above. Optional Shares shall be purchased from the Company, for the account of each Underwriter in proportion to the number of Firm Shares set forth opposite such Underwriter’s name in Schedule I hereto. No Optional Shares shall be sold and delivered unless the Firm Shares previously have been, or simultaneously are, sold and delivered.

**4. Delivery of and Payment for Securities.** Delivery of certificates for the Firm Shares to be purchased by the Underwriters from the Company against payment for such securities shall be made at the offices of the Representative (or such other place as mutually may be agreed upon by the Company and the Representative), on the second full Business Day following the date hereof or, if the pricing of the Firm Shares occurs after 4:30 p.m., New York City time, on the third full Business Day thereafter, or at such other date as shall be determined by the Representative and the Company (the “**First Closing Date**”).

The option to purchase Optional Shares granted in Section 3 hereof may be exercised during the term thereof by written notice to the Company from the Representative. The option may be exercised in whole or part, and if in part, the option can be exercised on multiple occasions. Such notice shall set forth the aggregate number of Optional Shares as to which the option is being exercised and the time and date, not earlier than either the First Closing Date or the first Business Day after the date on which the option shall have been exercised nor later than the fourth Business Day after the date of such exercise, as determined by the Representative, when the Optional Shares are to be delivered (the “**Option Closing Date**”). Delivery and payment for such Optional Shares is to be at the offices set forth above for delivery and payment of the Firm Shares. (The First Closing Date and each Option Closing Date are herein individually referred to as the “**Closing Date**” and collectively referred to as the “**Closing Dates**”).



Delivery of the Firm Shares and any Optional Shares shall be made by or on behalf of the Company to the Underwriters against payment by the Underwriters of the purchase price therefor by wire transfer of immediately available funds to an account specified in writing, not later than the close of business on the business day next preceding the First Date or the Option Closing Date, as the case may be, by the Company. Payment for the Securities sold by the Company hereunder shall be delivered by the Representative to the Company. Delivery of the Shares shall be made through the facilities of The Depository Trust Company unless the Representative shall otherwise instruct.

**5. Covenants.** The Company covenants and agrees with the Underwriters that:

(a) During such period beginning on the Initial Sale Time and ending on the later of the Closing Date or such date, as in the opinion of counsel for the Underwriters, the Prospectus is no longer required by law to be delivered in connection with sales as contemplated by this Agreement by any Underwriter or any dealer, including in circumstances where such requirement may be satisfied pursuant to Rule 172 (the “**Prospectus Delivery Period**”), prior to amending or supplementing the Registration Statement (including any registration statement filed under Rule 462(b) under the Securities Act), the Disclosure Package or the Prospectus, the Company shall furnish to the Representative for review a copy of each such proposed amendment or supplement, and the Company shall not file any such proposed amendment or supplement to which the Representative reasonably objects.

(b) After the date of this Agreement, the Company shall promptly advise the Representative in writing (i) when the Registration Statement, if not effective at the Execution Time, shall have become effective, (ii) of the receipt of any comments of, or requests for additional or supplemental information from, the Commission, (iii) of the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to any Preliminary Prospectus or the Prospectus, (iv) of the time and date that any post-effective amendment to the Registration Statement becomes effective and (v) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto or of any order or notice preventing or suspending the use of the Registration Statement, any Preliminary Prospectus or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Common Stock from any securities exchange upon which it is listed for trading or included or designated (or approved for inclusion or designation) for quotation, or of the threatening or initiation of any proceedings for any of such purposes. The Company shall use its best efforts to prevent the issuance of any such stop order or prevention or suspension of such use. If the Commission shall enter any such stop order or order or notice of prevention or suspension at any time, the Company will use its best efforts to obtain the lifting of such order at the earliest possible moment, or will file a new registration statement and use its best efforts to have such new registration statement declared effective as soon as practicable. Additionally, the Company agrees that it shall comply with the provisions of Rules 424(b) and 434, as applicable, under the Securities Act, including with respect to the timely filing of documents thereunder, and will use its reasonable efforts to confirm that any filings made by the Company under such Rule 424(b) were received in a timely manner by the Commission.

(c) (i) If the Preliminary Prospectus included in the Disclosure Package is being used to solicit offers to buy the Securities and any event or development shall occur or condition exist as a result of which it is necessary to amend or supplement the Disclosure Package in order to make the statements therein, in light of the circumstances under which they were made or then prevailing, as the case may be, not misleading (in which case the Company agrees to notify the Representative promptly of any such event or condition), or if in the reasonable opinion of the Representative it is otherwise necessary to amend or supplement the Disclosure Package to comply with law, the Company agrees to promptly prepare, file with the Commission and furnish to the Underwriters and to dealers, at its own expense, amendments or supplements to the Disclosure Package so that the statements in the Disclosure Package as so amended or supplemented will not be, in the light of the circumstances under which they were made or then prevailing, as the case may be, misleading or so that the Disclosure Package, as amended or supplemented, will comply with law; (ii) if, during the Prospectus Delivery Period, any event or development shall occur or condition exist as a result of which it is necessary to amend or supplement the Registration Statement or the Prospectus in order to make the statements therein, in the light of the circumstances under which they were made or then prevailing, as the case may be, not misleading (in which case the Company agrees to notify the Representative

promptly of any such event or condition), or if in the reasonable opinion of the Representative it is otherwise necessary to amend or supplement the Registration Statement or the Prospectus to comply with law, including in connection with the delivery of the Prospectus, the Company agrees to promptly prepare, file with the Commission (and use its best efforts to have any amendment to the Registration Statement or any new registration statement to be declared effective) and furnish to the Underwriters and to dealers, amendments or supplements to the Registration Statement or the Prospectus, or any new registration statement so that the statements in the Registration Statement or the Prospectus as so amended or supplemented will not be, in the light of the circumstances under which they were made or then prevailing, as the case may be, misleading or so that the Registration Statement or the Prospectus, as amended or supplemented, will comply with law.

(d) The Company agrees that, unless it obtains the prior written consent of the Representative, it will not make any offer relating to the Common Stock that would constitute an Issuer Free Writing Prospectus or that would otherwise constitute a “free writing prospectus” (as defined in Rule 405 of the Securities Act) required to be filed by the Company with the Commission or retained by the Company under Rule 433 of the Securities Act; provided that the prior written consent of the Representative hereto shall be deemed to have been given in respect of any Issuer Free Writing Prospectus included in Schedule II hereto. Any such free writing prospectus consented to by the Representative is hereinafter referred to as a “**Permitted Free Writing Prospectus**”. The Company agrees that (i) it has treated and will treat, as the case may be, each Permitted Free Writing Prospectus as an Issuer Free Writing Prospectus, and (ii) has complied and will comply, as the case may be, with the requirements of Rules 164 and 433 of the Securities Act applicable to any Permitted Free Writing Prospectus, including in respect of timely filing with the Commission, legending and record keeping.

(e) The Company shall furnish to the Underwriters, from time to time and without charge, copies of the Registration Statement of which three shall be signed and shall include exhibits and all amendments and supplements to any of such Registration Statement, in each case as soon as available and in such quantities as the Underwriters may from time to time reasonably request.

(f) The Company shall take or cause to be taken all necessary action and furnish to whomever the Underwriters may direct such information as may be required in qualifying the Securities for sale under the laws of such jurisdictions which the Underwriters shall designate and to continue such qualifications in effect for as long as may be necessary for the distribution of the Securities; except that in no event shall the Company be obligated in connection therewith to qualify as a foreign corporation, or to execute a general consent for service of process.

(g) The Company shall make generally available to its securityholders, in the manner contemplated by Rule 158(b) under the Securities Act, as soon as practicable but in any event not later than 60 days after the end of its fiscal quarter in which the first anniversary date of the effective date of the Registration Statement occurs, an earning statement which will comply with Section 11(a) of the Securities Act covering a period of at least 12 consecutive months beginning after the effective date of the Registration Statement.

(h) Except for the issuance of options to directors, officers, employees and consultants in the ordinary course under plans approved by the Company’s board of directors and disclosed in the Prospectus, the Company will not, without the prior written consent of the Representative (which consent may be withheld in the Representative’s sole discretion), directly or indirectly, issue, sell, offer, agree to sell, contract or grant any option to sell (including, without limitation, pursuant to any short sale), pledge, make any short sale of, maintain any short position with respect to, transfer, establish or maintain an open “put equivalent position” within the meaning of Rule 16a-1(h) under the Exchange Act, enter into any swap, derivative transaction or other arrangement (whether such transaction is to be settled by delivery of common stock, other securities, cash or other consideration) that transfers to another, in whole or in part, any of the economic consequences of ownership, or otherwise dispose of any shares of Common Stock (including, without limitation, any sales pursuant to the At-The-Market Issuance Sales Agreement, as amended by Amendment No. 1 to the At-The-Market Sales Agreement, dated as of September 16, 2016, by and among the Company, MLV & Co. LLC and FBR Capital Markets & Co., or any similar arrangement), options or warrants to acquire shares of Common Stock, or securities exchangeable or exercisable for or convertible into shares of Common Stock, or publicly announce an intention to do any of the foregoing, for a period commencing on the date hereof and continuing through the close of trading on the date 90 days after the date of the Prospectus (the “**Lock-Up Period**”).

(i) The Company shall cause each officer and director of the Company and shall cause Essex Woodland Health Ventures Fund VI, L.P., in its capacity as a holder of shares of Common Stock, to furnish to the Representative, on or prior to the date of this Agreement, a letter or letters, in form and substance satisfactory to counsel for the Underwriters, pursuant to which each such person shall agree, subject to customary exceptions, not to offer for sale, contract to sell, sell, distribute, grant any option, right or warrant to purchase, pledge, hypothecate or otherwise dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into, or exercisable or exchangeable for, shares of Common Stock during the 90 days following the date of the Prospectus, except with the Representative's prior written consent.

(j) The Company shall maintain, at its expense, a registrar and transfer agent for the Common Stock.

(k) The Company shall apply the net proceeds of the sale of the Securities in the manner specified in the Prospectus under the heading "Use of Proceeds."

(l) The Company will furnish to its securityholders annual reports containing financial statements audited by independent public accountants and quarterly reports containing financial statements and financial information which may be unaudited. During the period of two years from the date hereof, the Company will deliver to the Underwriters copies of each annual report of the Company and each other report furnished by the Company to its securityholders and will deliver to the Underwriters, as soon as they are available, copies of any other reports (financial or otherwise) which the Company shall publish or otherwise make available to any of its securityholders as such, and as soon as they are available, copies of any reports and financial statements furnished to or filed with the Commission or FINRA.

(m) The Company will use its best efforts to maintain the listing of the Securities on the Nasdaq Global Market and any other securities exchange on which they are listed.

(n) Whether or not this Agreement is terminated or the sale of the Securities to the Underwriters is consummated, the Company shall pay or cause to be paid (A) all expenses (including stock transfer taxes) incurred in connection with the delivery to the Underwriters of the Securities, (B) all fees and expenses (including, without limitation, fees and expenses of the Company's accountants and counsel) in connection with the preparation, printing, filing, delivery and shipping of the Registration Statement (including the financial statements therein and all amendments and exhibits thereto), each preliminary prospectus, the Disclosure Package and the Prospectus, as amended or supplemented, and the printing, delivery and shipping of this Agreement and other underwriting documents, including, if applicable, Underwriters' Questionnaires, Underwriters' Powers of Attorney, Blue Sky Memoranda, the Agreement Among Underwriters and Selected Dealer Agreements, (C) if necessary, all filing fees and reasonable fees and disbursements of counsel to the Underwriters incurred in connection with the qualification of the Securities for sale under state securities laws as provided in Section 5(f) hereof, (D) any applicable listing fees, (E) the cost of printing certificates representing the Securities, (F) the cost and charges of any transfer agent or registrar, and (G) all other costs and expenses incident to the performance of its obligations hereunder which are not otherwise provided for in this Section. If the sale of the Securities provided for herein is not consummated by reason of acts of the Company which prevent this Agreement from becoming effective, or by reason of any failure, refusal or inability on the part of the Company to perform any agreement on its part to be performed or because any other condition of the Underwriters' obligations hereunder is not fulfilled, unless the failure to perform the agreement or fulfill the condition is due to the default or omission of the Underwriters, the Company shall reimburse the Underwriters for all reasonable out-of-pocket disbursements (including fees and disbursements of counsel) incurred by the Underwriters in connection with its investigation, preparing to market and marketing the Securities or in contemplation of performing its obligations hereunder. The Company shall not in any event be liable to the Underwriters for loss of anticipated profits from the transactions covered by this Agreement.

**6. Conditions of Underwriters' Obligations.** The obligations of the Underwriters hereunder are subject to the accuracy, at and as of the date hereof and the First Closing Date (as if made at the First Closing Date) and, with respect to the Optional Shares, each Option Closing Date (as if made at the Option Closing Date), of the representations and warranties of the Company contained herein, to the performance by the Company of its obligations hereunder and to the following additional conditions:

(a) The Registration Statement shall be effective and all filings required by Rules 424, 430A and 433 under the Securities Act shall have been timely made; no stop order suspending the effectiveness of the Registration Statement or any amendment thereof shall have been issued; no proceedings for the issuance of such an order shall have been initiated or threatened; and any request of the Commission for additional information (to be included in the Registration Statement, the Disclosure Package, the Prospectus, any Issuer Free Writing Prospectus or otherwise) shall have been complied with to the Representative's satisfaction.

(b) The Representative shall not have advised the Company that the Registration Statement, the Disclosure Package or the Prospectus, or any amendment thereof or supplement thereto, contains an untrue statement of fact which, in the Representative's opinion, is material, or omits to state a fact which, in the Representative's opinion, is material and is required to be stated therein or is necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) On each Closing Date, the Underwriters shall have received (i) the favorable opinion and 10b-5 statement of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLC, counsel for the Company, substantially in the form satisfactory to the Representative (with appropriate modifications acceptable to the Representative for any opinion or 10b-5 statement delivered on any Option Closing Date), and (ii) the favorable opinion of Foley & Lardner LLP, intellectual property counsel for the Company, in form and substance acceptable to the Representative, each dated as of such Closing Date.

(d) On each Closing Date the Underwriters shall have received the favorable opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., counsel for the Underwriters, dated as of such Closing Date, in form and substance satisfactory to the Representative.

(e) There shall have been furnished to the Underwriters a certificate of the Company, dated as of each Closing Date and addressed to the Underwriters, signed by the Chief Executive Officer and by the Chief Financial Officer of the Company to the effect that:

(i) The representations and warranties of the Company in this Agreement are true and correct, 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 suspending the effectiveness of the Registration Statement has been issued, and no proceedings for that purpose have been initiated or are pending or, to their knowledge, contemplated;

(iii) Any and all filings required by Rules 424, 430A, 430B and 430C under the Securities Act have been timely made;

(iv) The signers of said certificate have carefully examined the Registration Statement and the Disclosure Package and the Prospectus, and any amendments or supplements thereto, and such documents contain all statements and information required to be included therein; the Registration Statement or any amendment thereto does not include any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading; and the Disclosure Package and the Prospectus or any supplements thereto do not include any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; and

(v) Since the effective date of the Registration Statement, there has occurred no event required to be set forth in an amendment or supplement to the Registration Statement or the Disclosure Package and the Prospectus which has not been so set forth.

(f) Since the effective date of the Registration Statement, neither the Company nor any of its Subsidiaries shall have sustained any loss by strike, fire, flood, accident or other calamity (whether or not insured), which has a material adverse effect on the Company or its Subsidiaries taken as a whole, nor shall have become a party to or the subject of any litigation that would reasonably be expected to have a material adverse effect on the Company and its

Subsidiaries taken as a whole, nor shall there have been a material adverse change in the general affairs, business, key personnel, capitalization, financial position, earnings or net worth of the Company and its Subsidiaries, whether or not arising in the ordinary course of business, which loss, litigation or change, in the Representative's judgment, shall render it inadvisable to proceed with the delivery of the Securities.

(g) On the date hereof, and on each Closing Date, the Underwriters shall have received from BDO, independent registered public accounting firm for the Company, a letter dated the date hereof addressed to the Underwriters in form and substance satisfactory to the Representative, containing statements and information of the type ordinarily included in accountant's "comfort letters" to Underwriters, delivered according to Statement of Auditing Standards No. 72 (or any successor bulletin), with respect to the respective audited and unaudited financial statements and certain financial information contained or incorporated by reference in the Registration Statement and the Prospectus for which such accountant was engaged by the Company.

(h) Since the date of the Prospectus, there shall not have been a Material Adverse Effect.

(i) The "lock-up" agreements required by Section 5(i) of this Agreement shall have been delivered to the Representative and be in full force and effect on such Closing Date.

(j) On or before the First Closing Date, the Securities shall be listed on the Nasdaq Global Market.

All such opinions, certificates, letters and documents shall be in compliance with the provisions hereof only if they are satisfactory in form and substance to the Representative and to counsel for the Underwriters. The Company shall furnish the Underwriters with such conformed copies of such opinions, certificates, letters and other documents as the Representative shall reasonably request. If any of the conditions specified in this Section 6 shall not have been fulfilled when and as required by this Agreement, this Agreement and all obligations of the Underwriters hereunder may be canceled at, or at any time prior to, the First Closing Date or any Option Closing Date, as the case may be, by the Representative. Any such cancellation shall be without liability of the Underwriters to the Company. Notice of such cancellation shall be given to the Company in writing, or by telegraph or telephone and confirmed in writing.

## **7. Indemnification and Contribution.**

(a) The Company agrees to indemnify, defend and hold harmless each of the Underwriters and any person who controls such Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, and the respective directors, officers, employees and agents of each Underwriter from and against any loss, expense, liability, damage or claim (including the reasonable cost of investigation) which, jointly or severally, such Underwriter or any such director, officer, employee, agent or controlling person may incur under the Securities Act, the Exchange Act or otherwise, insofar as such loss, expense, liability, damage or claim arises out of or is based upon (A) any breach of any representation, warranty or covenant of the Company contained herein, (B) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereof), the Disclosure Package, any Issuer Free Writing Prospectus or the Prospectus (the term Prospectus for the purpose of this Section being deemed to include the preliminary prospectus included in the Registration Statement at the time it became effective, the Prospectus and the Prospectus as amended or supplemented by the Company), (C) any application or other document, or any amendment or supplement thereto, executed by the Company or based upon written information furnished by or on behalf of the Company filed in any jurisdiction (domestic or foreign) in order to qualify the Common Stock under the securities or blue sky laws thereof or filed with the Commission or any securities association or securities exchange (each an "Application"), (D) any omission or alleged omission to state a material fact required to be stated in any such Registration Statement, or necessary to make the statements made therein, in light of the circumstances under which they were made, not misleading, or (E) any omission or alleged omission from the Disclosure Package, any Issuer Free Writing Prospectus, Prospectus or any Application of a material fact necessary to make the statements made therein, in light of the circumstances under which they were made, not misleading; except in the case of (B), (D) and (E) above only insofar as any such loss, expense, liability, damage or claim arises out of or is based upon any untrue statement or alleged untrue statement or omission or alleged omission of a material fact contained in and in conformity with information furnished in writing by the Underwriter to the Company expressly for use in such Registration Statement, Disclosure Package, Issuer Free Writing Prospectus, Prospectus or Application; and to promptly reimburse the Underwriters, or any such director,

officer, employee, agent or controlling person for any legal and other expense reasonably incurred by the Underwriter, or any such director, officer, employee, agent or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The indemnity agreement set forth in this Section 7(a) shall be in addition to any liability which the Company may otherwise have.

(b) Each of the Underwriters agrees, severally and not jointly, to indemnify, defend and hold harmless the Company, the Company's directors, the Company's officers that signed the Registration Statement, and any person who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, from and against any loss, expense, liability, damage or claim (including the reasonable cost of investigation) which the Company or any such person may incur under the Securities Act, the Exchange Act or otherwise, insofar as such loss, expense, liability, damage or claim arises out of or is based upon (A) any breach of any representation, warranty or covenant of such Underwriter contained herein, (B) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereof), the Disclosure Package, any Issuer Free Writing Prospectus, the Prospectus, or any Application, (C) any omission or alleged omission to state a material fact required to be stated in any such Registration Statement, or necessary to make the statements made therein, in light of the circumstances under which they were made, not misleading, or (D) any omission or alleged omission from the Disclosure Package, any such Issuer Free Writing Prospectus, Prospectus or any Application of a material fact necessary to make the statements made therein, in the light of the circumstances under which they were made, not misleading, but in each case only insofar as such untrue statement or alleged untrue statement or omission or alleged omission was made in such Registration Statement, Disclosure Package, Issuer Free Writing Prospectus, Prospectus or Application in reliance upon and in conformity with information furnished in writing by the Underwriter to the Company expressly for use therein; and to promptly reimburse the Company, or any such director, officer, employee or controlling person for any legal and other expense reasonably incurred by the Company, or any such director, officer, employee or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The indemnity agreement set forth in this Section 7(b) shall be in addition to any liabilities that the Underwriters may otherwise have.

(c) Promptly after receipt by an indemnified party under subsection (a) or (b) above of notice of any claim or the commencement of any action, the indemnified party shall, if a claim in respect thereof is to be made against the indemnifying party under such subsection, notify the indemnifying party in writing of the claim or the commencement of that action; the failure to notify the indemnifying party shall not relieve it from any liability which it may have to an indemnified party except to the extent such indemnifying party has been materially prejudiced otherwise than under such subsection. If any such claim or action shall be brought against an indemnified party, and it shall notify the indemnifying party thereof, the indemnifying party shall be entitled to participate therein and, to the extent that it wishes, jointly with any other similarly notified indemnifying party, to assume the defense thereof with counsel reasonably satisfactory to the indemnified party *provided, however*, that if the named parties in any such action (including impleaded parties) include any of the Underwriters or any director, officer, employee, agent or controlling person of any of the Underwriters as an indemnified party or parties as well as the Company, and such indemnified party or parties shall have reasonably concluded, based on advice of outside counsel, that there may be one or more legal defenses reasonably available to it or them which are different from or additional to those available to the Company, or that representation of the indemnified party or parties and the Company by the same counsel would be inappropriate due to actual or potential differing interests between them, the Company shall not have the right to direct the defense of such action on behalf of such indemnified party or parties and such indemnified party or parties shall have the right to select separate counsel to defend such action on behalf of such indemnified party or parties. After notice from the indemnifying party to the indemnified party of its election to assume the defense of such claim or action, the indemnifying party shall not be liable to the indemnified party under such subsection for any legal or other expenses subsequently incurred by the indemnified party in connection with the defense thereof other than reasonable costs of investigation unless such indemnified party shall have employed separate counsel in accordance with the proviso to the immediately preceding sentence, in which case the indemnifying party shall be liable for all legal fees and expenses of such separate counsel.

(d) If the indemnification provided for in this Section 7 is unavailable or insufficient to hold harmless an indemnified party under subsections (a) and (b) of this Section 7 in respect of any losses, expenses, liabilities, damages or claims referred to therein, then each applicable indemnifying party, in lieu of indemnifying such

indemnified party, shall contribute to the amount paid or payable by such indemnified party as a result of such losses, expenses, liabilities, damages or claims (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the applicable Underwriter, on the other hand, from the offering of the Securities or (ii) if (but only if) the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and of the applicable Underwriter, on the other hand, in connection with the statements or omissions which resulted in such losses, expenses, liabilities, damages or claims, as well as any other relevant equitable considerations. The relative benefits received by the Company and the applicable Underwriter shall be deemed to be in the same proportion as the total proceeds from the Offering (net of underwriting discounts and commissions but before deducting expenses) received by the Company bear to the underwriting discounts and commissions received by such Underwriter. The relative fault of the Company and of the applicable Underwriter shall be determined by reference to, among other things, whether the untrue statement or alleged untrue statement of a material fact or omission or alleged omission relates to information supplied by the Company or by the applicable Underwriter, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. The amount paid or payable by a party as a result of the losses, claims, damages and liabilities referred to above shall be deemed to include any legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any claim or action.

(e) The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 7 were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in subsection (d)(i) and, if applicable (ii), above. Notwithstanding the provisions of this Section 7, no Underwriter shall be required to contribute any amount in excess of the underwriting discounts and commissions applicable to the Securities purchased by such Underwriter. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

## **8. Effective Date and Termination.**

(a) This Agreement shall become effective at 9:00 a.m., New York City time, on the first full Business Day following the earlier of (i) the date hereof, or (ii) the day on which the Underwriters release the initial offering of the Firm Shares for sale to the public. Until this Agreement is effective, it may be terminated by the Company or by the Underwriters by giving notice as hereinafter provided to the Company, except that the provisions of Sections 5(n) and 7 hereof shall at all times be effective. For the purpose of this Section, the Securities shall be deemed to have been released for sale to the public upon release by the Representative of an electronic communication authorizing commencement of the offering of the Securities for sale by the Underwriters or other securities dealers.

(b) Until the First Closing Date, this Agreement may be terminated by the Representative by giving notice as hereinafter provided to the Company if: (i) the Company shall have failed, refused or been unable, at or prior to the First Closing Date, to perform any agreement on its part to be performed hereunder, unless the failure to perform any agreement is due to the default or omission by an Underwriter; (ii) any other condition of the obligations of the Underwriters hereunder is not fulfilled; (iii) trading in securities generally on the New York Stock Exchange or Nasdaq shall have been suspended or minimum or maximum prices shall have been established on either of such exchanges by the Commission or by such exchange or other regulatory body or governmental authority having jurisdiction; (iv) trading or quotation in any of the Company's securities shall have been suspended or limited by the Commission or by Nasdaq or other stock exchange or regulatory body or governmental authority having jurisdiction; (v) a general banking moratorium shall have been declared by Federal or state authorities; (vi) a material disruption in securities settlement, payment or clearance services in the United States shall have occurred; (vii) there shall have been any material adverse change in general economic, political or financial conditions or if the effect of international conditions on the financial markets in the United States shall be such as, in the Representative's judgment, makes it inadvisable to proceed with the delivery of the Securities; or (viii) any attack on, outbreak or escalation of hostilities, declaration of war or act of terrorism involving the United States or any other national or international calamity or emergency if, in the Representative's judgment, the effect of any such attack, outbreak, escalation, declaration, act, calamity or emergency makes it impractical or inadvisable to proceed with the completion of the public offering or the delivery of the Securities. Any termination of this Agreement pursuant to this Section 8 shall be without liability on the part of the Company or the Underwriters, except as otherwise provided in Sections 5(n) or 7 hereof.

Any notice referred to above may be given at the address specified in Section 11 hereof in writing or by telegraph or telephone, and if by telegraph or telephone, shall be immediately confirmed in writing.

**9. Default by One or More of the Underwriters.** If one or more of the Underwriters shall fail on any Closing Date, as applicable, to purchase the Securities which it or they are obligated to purchase under this Agreement (the “**Defaulted Securities**”), the Representatives shall have the right, within 24 hours thereafter, to make arrangements for one or more of the non-defaulting Underwriters, or any other underwriters, to purchase all, but not less than all, of the Defaulted Securities in such amounts as may be agreed upon and upon the terms herein set forth; if, however, the Representatives shall not have completed such arrangements within such 24-hour period, then:

- (i) if the number of Defaulted Securities does not exceed 10% of the number of Securities to be purchased on such date, each of the non-defaulting Underwriters shall be obligated, severally and not jointly, to purchase the full amount thereof in the proportions that their respective underwriting obligations hereunder bear to the underwriting obligations of all non-defaulting Underwriters, or
- (ii) if the number of Defaulted Securities exceeds 10% of the number of Securities to be purchased on such date, this Agreement or, with respect to any Option Closing Date, the obligation of the Underwriters to purchase, and the Company to sell, the Optional Shares to be purchased and sold on such Option Closing Date shall terminate without liability on the part of any non-defaulting Underwriter.

No action taken pursuant to this Section shall relieve any defaulting Underwriter from liability in respect of its default.

In the event of any such default which does not result in a termination of this Agreement or, in the case of an Option Closing Date, which does not result in a termination of the obligation of the Underwriters to purchase and the Company to sell the relevant Option Shares, as the case may be, either the

(i) Representatives or (ii) the Company shall have the right to postpone the Closing Date, as applicable, for a period not exceeding seven days in order to effect any required changes in the Registration Statement, Disclosure Package or the Prospectus or in any other documents or arrangements. As used herein, the term “Underwriter” includes any person substituted for an Underwriter under this Section 9.

**10. Survival of Indemnities, Contribution, Warranties and Representations.** All representations, warranties, and agreements of the Company and the Underwriters herein or in certificates delivered pursuant hereto, and the agreements of the Underwriters and the Company contained in Section 7 hereof, shall remain operative and in full force and effect regardless of any investigation made by or on behalf of the Underwriters or any controlling person thereof, or the Company or any of its officers, directors, or controlling persons, and shall survive delivery of, and payment for, the Securities to and by the Underwriters hereunder.

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

If to the Representative

or the Underwriters:     Ladenburg Thalmann & Co. Inc.  
277 Park Avenue, 26th Floor  
New York, NY 10172  
Attention: David Strupp  
Facsimile: (212) 308-2203

with a copy to:             Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C.  
666 Third Avenue  
New York, NY 10017  
Attention: Ivan K. Blumenthal, Esq.  
Facsimile: (212) 692-6784



If to the Company: MediciNova, Inc.  
4275 Executive Square, Suite 650  
La Jolla, CA 92037  
Attention: Chief Executive Officer  
Facsimile: (858) 373-7000

with a copy to: Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP  
3570 Carmel Mountain Road, Suite 200  
San Diego, CA 92130  
Attention: Kirt W Shuldberg  
Facsimile: (858) 436-8060

**12. Information Furnished by Underwriters.** The statements in the Prospectus set forth under the caption “Underwriting” in the table in the first paragraph concerning the names of each Underwriters and the number of Firm Shares each Underwriters has agreed to purchase, in the paragraphs concerning sales by the Underwriters to the public at the offering price and to dealers at such price less a concession and sales by the Underwriters to discretionary accounts, and in the first two paragraphs under the caption “Underwriters—Stabilization, short positions and penalty bids” constitute the only written information furnished by or on behalf of the Underwriters referred to in paragraphs (b) and (c) of Section 1 hereof and in paragraphs (a) and (b) of Section 7 hereof.

**13. Parties.** This Agreement is made solely for the benefit of the Underwriters, the Company, any officer, director, employee agent or controlling person referred to in Section 7 hereof, and their respective successors and assigns, and no other person shall acquire or have any right by virtue of this Agreement. The term “successors and assigns,” as used in this Agreement, shall not include any purchaser of any of the Securities from any Underwriters merely by reason of such purchase.

**14. Definition of “Business Day” and “Subsidiary”.** For purposes of this Agreement, (a) “Business Day” means any day on which Nasdaq is open for trading, and (b) “Subsidiary” has the meaning set forth in Rule 405 under the Securities Act.

**15. Governing Law; Jurisdiction.** This Agreement shall be governed by and construed in accordance with the laws of the State of New York, without giving effect to the choice of law or conflict of laws principles thereof. Each of the Underwriters and the Company: (a) agrees that any legal suit, action or proceeding arising out of or relating to this Agreement and/or the transactions contemplated hereby shall be instituted exclusively in the Supreme Court of the State of New York, New York County, or in the United States District Court for the Southern District of New York; (b) waives any objection which it may have now or hereafter to the venue of any such suit, action or proceeding, and (c) irrevocably consents to the jurisdiction of the Supreme Court of the State of New York, New York County, or of the United States District Court for the Southern District of New York in any such suit, action or proceeding. Each of the Underwriters and the Company further agrees to accept and acknowledge service of any and all process which may be served in any such suit, action or proceeding in the Supreme Court of the State of New York, New York County, or in the United States District Court for the Southern District of New York and agrees that service of process upon the Company mailed by certified mail to the Company’s address or delivered via overnight delivery shall be deemed in every respect effective service of process upon the Company, in any such suit, action or proceeding, and service of process upon the Underwriters mailed by certified mail to the Underwriter’s address or delivered via overnight delivery shall be deemed in every respect effective service of process upon the Underwriters, in any such suit, action or proceeding. THE COMPANY (ON BEHALF OF ITSELF, THE SUBSIDIARIES AND, TO THE FULLEST EXTENT PERMITTED BY LAW, ON BEHALF OF ITS RESPECTIVE EQUITY HOLDERS AND CREDITORS) HEREBY WAIVES ANY RIGHT ANY OF THEM MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY CLAIM BASED UPON, ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT AND THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT, THE REGISTRATION STATEMENT AND THE PROSPECTUS.

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

**17. Absence of Fiduciary Relationship.** The Company acknowledges and agrees that:

(a) The Underwriters has been retained solely to act as Underwriters in connection with the sale of Securities and that no fiduciary, advisory or agency relationship between the Company and the Underwriters or any of their respective affiliates has been created in respect of any of the transactions contemplated by this Agreement or the Prospectus, irrespective of whether any Underwriter has advised or is advising the Company on other matters;

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

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

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

**18. General Provisions.** This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. This Agreement may be executed in two or more counterparts, each one of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The Section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.

Please confirm, by signing and returning to us two (2) counterparts of this Agreement, that the Underwriters is acting on behalf of itself and that the foregoing correctly sets forth the agreement among the Company and the Underwriters.

*[Remainder of page intentionally left blank]*

Very truly yours,

MEDICINOVA, INC.

By: /s/ Yuichi Iwaki  
Name: Yuichi Iwaki  
Title: President and CEO

Confirmed and accepted as of the date first above mentioned:

LADENBURG THALMANN & CO. INC.  
As Representative of the Several Underwriters

By: /s/ David Strupp  
Name: David Strupp  
Title: Managing Director

SCHEDULE I

Underwriting Agreement dated February 7, 2018

<u>Underwriters</u>	<u>Number of Firm Shares to be Purchased</u>
Ladenburg Thalmann & Co. Inc.	3,314,918
B. Riley FBR, Inc.	1,104,972
<b>TOTAL</b>	<b><u><u>4,419,890</u></u></b>

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**SCHEDULE II**

**Issuer Free Writing Prospectus**

None



February 7, 2018

MediciNova, Inc.  
4275 Executive Square, Suite 300  
La Jolla, California 92037

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the sale and issuance by MediciNova, Inc., a Delaware corporation (the “**Company**”), of up to an aggregate of 5,082,873 shares (the “**Shares**”) (including up to 662,983 that may be sold pursuant to the exercise of an overallotment option granted by the Company to the underwriters) of the Company’s common stock, par value \$0.001 per share (the “**Common Stock**”), pursuant to (i) a shelf registration statement on Form S-3 (File No. 333-220593) (the “**Registration Statement**”) filed with the Securities and Exchange Commission (the “**Commission**”) under the Securities Act of 1933, as amended (the “**Act**”), the related prospectus dated October 2, 2017 (the “**Base Prospectus**”), as supplemented by the prospectus supplement dated February 7, 2018 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 (ii) an underwriting agreement dated February 7, 2018 and entered into by and between the Company and Ladenburg Thalmann & Co. Inc., as representative of the several underwriters (the “**Underwriting Agreement**”).

In connection with this opinion, we have examined and relied upon the Registration Statement and the Prospectus and the Company’s Certificate of Incorporation and 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 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 federal laws of the United States and the General Corporation Law of the State of Delaware (the “**DGCL**”). 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.

GUNDERSON DETTMER STOUGH VILLENEUVE FRANKLIN & HACHIGIAN, LLP  
3570 CARMEL MOUNTAIN ROAD, SUITE 200, SAN DIEGO, CA 92130 / PHONE: 858.436.8000 / FAX: 877.881.9192



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NEW YORK  
SAN DIEGO  
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SINGAPORE

We consent to the reference to our firm under the caption “Legal Matters” in the Prospectus and to the filing of this opinion as an exhibit to a Current Report of the Company on Form 8-K. In giving our consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Sincerely,

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

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### **MediciNova Announces Proposed Underwritten Public Offering of Common Stock**

LA JOLLA, Calif., February 7, 2018 — MediciNova, Inc., a biopharmaceutical company traded on the NASDAQ Global Market (NASDAQ:MNOV) and the JASDAQ Market of the Tokyo Stock Exchange (Code Number: 4875), announced today that it intends to offer shares of its common stock in an underwritten public offering. All of the shares of common stock to be sold in the offering will be offered by MediciNova. MediciNova intends to grant the underwriters a 30-day option to purchase up to an aggregate of an additional 15% of the shares of its common stock offered in the public offering. The offering is subject to market and other conditions and there can be no assurance as to whether or when the offering may be completed, or as to the actual size or terms of the offering.

MediciNova intends to use the net proceeds received from the offering primarily to continue to fund the development of its MN-166 (ibudilast) and MN-001 (tipelukast) programs, including a Phase 3 clinical trial of MN-166 (ibudilast) for the treatment of progressive MS, and for working capital and general corporate purposes, including support for MediciNova's continuing research and development of its product candidates and research programs, clinical trials, commercialization activities and business development activities. MediciNova may use a portion of the net proceeds for acquisitions of businesses, products, technologies or licenses that are complementary to its business, although MediciNova has no present commitments or agreements to do so.

Ladenburg Thalmann & Co. Inc., a subsidiary of Ladenburg Thalmann Financial Services Inc. (NYSE American:LTS), is acting as sole book-running manager of the offering. B. Riley FBR, Inc. is acting as lead manager of the offering.

*The offering is made pursuant to a shelf registration statement on Form S-3 (File No. 333-220593) that was filed by MediciNova with the Securities and Exchange Commission (SEC) and was declared effective on October 2, 2017. A preliminary prospectus supplement and accompanying prospectus relating to the offering will be filed with the SEC and will be available on the SEC's website at <https://www.sec.gov/>. When available, copies of the preliminary prospectus supplement and the accompanying prospectus relating to the offering may be obtained from Ladenburg Thalmann & Co. Inc., 277 Park Avenue, 26th Floor, New York, NY 10172, or by email at [prospectus@ladenburg.com](mailto:prospectus@ladenburg.com).*

*This press release shall not constitute an offer to sell or the solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction. Any offer, if at all, will be made only by means of the prospectus supplement and accompanying prospectus forming a part of the effective registration statement.*

#### **About MediciNova**

MediciNova, Inc. is a publicly-traded biopharmaceutical company founded upon acquiring and developing novel, small-molecule therapeutics for the treatment of diseases with unmet medical needs with a primary commercial focus on the U.S. market. MediciNova's current strategy is to focus on MN-166 (ibudilast) for neurological disorders such as progressive MS, ALS, glioblastoma and substance dependence and



addiction (e.g., methamphetamine dependence, opioid dependence, and alcohol use disorder) and MN-001 (tipelukast) for fibrotic diseases such as nonalcoholic steatohepatitis (NASH) and idiopathic pulmonary fibrosis (IPF). MediciNova's pipeline also includes MN-221 (bedoradrine) for the treatment of acute exacerbation of asthma and MN-029 (denibulin) for solid tumor cancers. MediciNova is engaged in strategic partnering and other potential funding discussions to support further development of its programs. For more information on MediciNova, Inc., please visit [www.medicinova.com](http://www.medicinova.com).

## **Forward Looking Statements**

*Statements in this press release that are not historical in nature constitute forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including statements regarding MediciNova's expectations with respect to its proposed offering, its intention to grant the underwriters an option to purchase additional shares and its intended use of proceeds from the offering. These forward-looking statements include, without limitation, statements regarding the future development and efficacy of MN-166, MN-221, MN-001, and MN-029. These forward-looking statements may be preceded by, followed by or otherwise include the words "believes," "expects," "anticipates," "intends," "estimates," "projects," "can," "could," "may," "will," "would," "considering," "planning" or similar expressions. These forward-looking statements involve a number of risks and uncertainties that may cause actual results or events to differ materially from those expressed or implied by such forward-looking statements. Factors that may cause actual results or events to differ materially from those expressed or implied by these forward-looking statements include, but are not limited to, risks of obtaining future partner or grant funding for development of MN-166, MN-221, MN-001, and MN-029 and risks of raising sufficient capital when needed to fund MediciNova's operations and contribution to clinical development, risks and uncertainties inherent in clinical trials, including the potential cost, expected timing and risks associated with clinical trials designed to meet FDA guidance and the viability of further development considering these factors, product development and commercialization risks, the uncertainty of whether the results of clinical trials will be predictive of results in later stages of product development, the risk of delays or failure to obtain or maintain regulatory approval, risks associated with the reliance on third parties to sponsor and fund clinical trials, risks regarding intellectual property rights in product candidates and the ability to defend and enforce such intellectual property rights, the risk of failure of the third parties upon whom MediciNova relies to conduct its clinical trials and manufacture its product candidates to perform as expected, the risk of increased cost and delays due to delays in the commencement, enrollment, completion or analysis of clinical trials or significant issues regarding the adequacy of clinical trial designs or the execution of clinical trials, and the timing of expected filings with the regulatory authorities, MediciNova's collaborations with third parties, the availability of funds to complete product development plans and MediciNova's ability to obtain third party funding for programs and raise sufficient capital when needed, and the other risks and uncertainties described in MediciNova's filings with the Securities and Exchange Commission, including its annual report on Form 10-K for the year ended December 31, 2016 and its subsequent periodic reports on Form 10-Q and current reports on Form 8-K. Undue reliance should not be placed on these forward-looking statements, which speak only as of the date hereof. MediciNova disclaims any intent or obligation to revise or update these forward-looking statements.*

## **INVESTOR CONTACT:**

Geoff O'Brien  
Vice President  
MediciNova, Inc.  
[info@medicinova.com](mailto:info@medicinova.com)



### **MediciNova Announces Pricing of Underwritten Public Offering of Common Stock**

LA JOLLA, Calif., February 7, 2018 — MediciNova, Inc., a biopharmaceutical company traded on the NASDAQ Global Market (NASDAQ:MNOV) and the JASDAQ Market of the Tokyo Stock Exchange (Code Number: 4875), announced today the pricing of an underwritten public offering of 4,419,890 shares of its common stock at a price to the public of \$9.05 per share. The gross proceeds to MediciNova from this offering are expected to be approximately \$40.0 million, before deducting the underwriting discount and other estimated offering expenses. All of the shares of common stock to be sold in the offering are being offered by MediciNova. In addition, MediciNova has granted the underwriters a 30-day option to purchase up to an additional 662,983 shares of common stock at the public offering price, less underwriting discounts and commissions. The offering is expected to close on or about February 12, 2018, subject to customary closing conditions.

MediciNova intends to use the net proceeds received from the offering primarily to continue to fund the development of its MN-166 (ibudilast) and MN-001 (tipelukast) programs, including a Phase 3 clinical trial of MN-166 (ibudilast) for the treatment of progressive MS, and for working capital and general corporate purposes, including support for MediciNova's continuing research and development of its product candidates and research programs, clinical trials, commercialization activities and business development activities. MediciNova may use a portion of the net proceeds for acquisitions of businesses, products, technologies or licenses that are complementary to its business, although MediciNova has no present commitments or agreements to do so.

Ladenburg Thalmann & Co. Inc., a subsidiary of Ladenburg Thalmann Financial Services Inc. (NYSE American:LTS), is acting as sole book-running manager of the offering. B. Riley FBR, Inc. is acting as lead manager of the offering.

*The offering is made pursuant to a shelf registration statement on Form S-3 (File No. 333-220593) that was filed by MediciNova with the Securities and Exchange Commission (SEC) and was declared effective on October 2, 2017. A preliminary prospectus supplement and accompanying prospectus relating to the offering was filed with the SEC and a final prospectus supplement and the accompanying prospectus relating to this offering will be filed with the SEC. Copies of the final prospectus supplement and the accompanying prospectus relating to and describing the terms of the offering may be obtained, when available, from Ladenburg Thalmann & Co. Inc., 277 Park Avenue, 26th Floor, New York, NY 10172, or by email at [prospectus@ladenburg.com](mailto:prospectus@ladenburg.com).*

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Vice President  
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