

PROSPECTUS



MEDICINNOVA, INC.

869,047 Shares of Common Stock

Issuable Upon Exercise of Outstanding Warrants

The selling stockholders named in this prospectus are offering up to 869,047 shares of our common stock they may acquire upon the exercise of outstanding warrants. We issued an aggregate of two warrants (the “Warrants”) to the selling stockholders in a private placement financing pursuant to the terms of a securities purchase agreement we entered into with the selling stockholders in May 2013. One warrant for 750,000 shares of common stock has an exercise price of \$3.15 per share and one warrant for 119,047 shares of common stock has an exercise price of \$3.38 per share. We will not receive any proceeds from the resale of the shares of our common stock by the selling stockholders. Any proceeds received by us from the exercise of the Warrants will be used for general corporate purposes.

The selling stockholders may offer shares of our common stock from time to time in a number of different ways and at varying prices. For more information on possible methods of offer and sale by the selling stockholders, refer to the section of this prospectus entitled “Plan of Distribution.”

Our common stock is listed on The NASDAQ Global Market under the symbol “MNOV” and on the Jasdaq Market of the Tokyo Securities Exchange under the code “4875.” On December 8, 2016, the last reported sale price of our common stock on The NASDAQ Global Market was \$7.45 per share.

Our business and an investment in our securities involve significant risks. See “[Risk Factors](#)” beginning on page 7 of this prospectus to read about factors that you should consider before making an investment decision.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is December 9, 2016

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we have filed with the U.S. Securities and Exchange Commission, or the SEC, under the Securities Act of 1933, as amended, or the Securities Act. Under this registration process, holders of the warrants we issued in a private placement financing in May 2013 pursuant to the terms of a securities purchase agreement may, from time to time, sell or otherwise dispose of up to 869,047 shares of our common stock. The registration statement containing this prospectus, including the exhibits to the registration statement, provides additional information about us and the securities offered under this prospectus. The registration statement, including the exhibits, can be read on the SEC’s website or at the SEC offices mentioned under the heading “Where You Can Find More Information.”

In this prospectus, as permitted by law, we “incorporate by reference” information from other documents that we file with the Securities and Exchange Commission (SEC). This means that we can disclose important information to you by referring to those documents. The information incorporated by reference is considered to be a part of this prospectus and should be read with the same care. When we make future filings with the SEC to update the information contained in documents that have been incorporated by reference, the information included or incorporated by reference in this prospectus is considered to be automatically updated and superseded. In other words, in case of a conflict or inconsistency between information contained in this prospectus and information incorporated by reference into this prospectus, you should rely on the information contained in the document that was filed later.

You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement. We have not authorized any other person to provide you with different information. Neither we nor any selling stockholder is making an offer to sell or soliciting an offer to buy our securities in any jurisdiction in which an offer or solicitation is not authorized or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus, any prospectus supplement, and the documents incorporated by reference into this prospectus and any prospectus supplement, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations, and prospects may have changed since those dates.

Unless the context otherwise requires, references in this prospectus to “MediciNova,” the “Company,” “we,” “us” and “our” refer to MediciNova, Inc.

The MediciNova logo is a registered trademark of MediciNova, Inc. This prospectus and the documents incorporated by reference into this prospectus may also contain trademarks and trade names that are the property of their respective owners. We do not intend our use or display of other companies’ trade names, trademarks or service marks to imply relationships with, or endorsements or sponsorship of us by, these other companies.

CAUTIONARY STATEMENTS REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any applicable prospectus supplement and the documents we have filed with the SEC that are incorporated by reference contain “forward-looking statements” within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These statements relate to future events or to our future operating or financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements may include, but are not limited to, statements about:

- the potential for our product candidates to receive regulatory approval for one or more indications on a timely basis, or at all;
- the success, timing, design and results of clinical trials for our product candidates, including any delays in commencing or completing enrollment for our ongoing or planned clinical trials;
- plans for future clinical trials and regulatory submissions;
- unexpected adverse side effects or inadequate therapeutic efficacy of our product candidates that could delay or prevent regulatory approval or commercialization or that could result in product liability claims;
- other difficulties or delays in development, testing, manufacturing and marketing of and obtaining regulatory approval for our product candidates;
- the continuation and success of our collaborations with our licensors;
- the performance of third party service providers and manufacturers;
- intellectual property rights and disputes, including the scope and validity of patent protection for our product candidates;
- the size and growth of the potential markets for our product candidates and our ability to serve those markets;
- the potential to attract one or more strategic partners and terms of any related transactions;
- intense competition and our ability to compete if any of our product candidates are ever commercialized;
- regulatory developments in the United States and foreign countries;
- the potential impact of uncertainties in the credit and capital markets or a future deterioration of these markets on our investment portfolio; and
- our ability to raise sufficient capital when needed, or at all.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “would,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “projects,” “predicts,” “potential” and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading “Risk Factors” contained in this prospectus and in our SEC filings. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statements.

You should read this prospectus and the documents we have filed with the SEC that are incorporated by reference completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

PROSPECTUS SUMMARY

This summary description about us and our business highlights selected information contained elsewhere in this prospectus or incorporated in this prospectus by reference. You should carefully read this entire prospectus and any accompanying prospectus supplement, including the “Risk Factors” section and each of the documents incorporated herein or therein by reference, before making an investment decision

About MediciNova, Inc.

Overview

We are a biopharmaceutical company focused on acquiring and developing novel, small molecule therapeutics for the treatment of serious diseases with unmet medical needs and a commercial focus on the U.S. market. Our current strategy is to focus our development activities on MN-166 (ibudilast) for neurological disorders such as progressive multiple sclerosis (MS), amyotrophic lateral sclerosis (ALS) and substance dependence (e.g., methamphetamine dependence, opioid dependence and alcohol dependence), and MN-001 (tipelukast) for fibrotic diseases such as nonalcoholic steatohepatitis (NASH) and idiopathic pulmonary fibrosis (IPF). Our pipeline also includes MN-221 (bedoradrine) for the treatment of acute exacerbations of asthma and MN-029 (denibulin) for solid tumor cancers. We were incorporated in Delaware in September 2000.

We have incurred significant net losses since our inception. As of September 30, 2016, we had an accumulated deficit of \$328.8 million and expect to incur substantial net losses for the next several years as we continue to develop certain of our existing product development programs, and over the long-term if we expand our research and development programs and acquire or in-license products, technologies or businesses that are complementary to our own.

Our goal is to build a sustainable biopharmaceutical business through the successful development of differentiated products for the treatment of serious diseases with unmet medical needs in high-value therapeutic areas. Key elements of our strategy are as follows:

- *Pursue the development of MN-166 for multiple potential indications primarily through non-dilutive financings.*

We intend to advance our diverse MN-166 (ibudilast) program through a combination of investigator-sponsored trials and trials funded through government grants or other grants. In addition to providing drug supply and regulatory support, we are funding portions of the consortium-sponsored trials. For example, we have contributed financially to the Secondary and Primary Progressive Ibudilast NeuroNEXT Trial in Multiple Sclerosis (SPRINT-MS) Phase 2 clinical trial of MN-166 for the treatment of progressive MS, which is primarily funded by the National Institutes of Health (NIH), and are contributing financially to the Carolinas Neuromuscular ALS-MDA Center clinical trial of MN-166 for the treatment of ALS. We intend to enter into additional strategic alliances to support further clinical development of MN-166.

- *Pursue the development of MN-001 for fibrotic diseases such as NASH and IPF.*

We intend to advance development of MN-001 through a combination of investigator-sponsored trials with or without grant funding as well as trials we may fund.

- *Strategically partner with one or more leading pharmaceutical companies to complete late-stage product development and successfully commercialize our products.*

We develop and maintain relationships with pharmaceutical companies that are therapeutic category leaders. Upon completion of proof-of-concept Phase 2 clinical trials, we intend to enter into strategic alliances with leading pharmaceutical companies who seek late-stage product candidates, such as MN-166, MN-221, MN-001 and MN-029, to support further clinical development and product commercialization.

We entered into an agreement to form a joint venture company with Zhejiang Medicine Co., Ltd. and Beijing Medfron Technologies Co., Ltd. (formerly Beijing Make-Friend Medicine Technology Co., Ltd.) effective September 27, 2011. The joint venture agreement provides for the joint venture company, Zhejiang Sunny Bio-Medical Co., Ltd. (“Zhejiang Sunny”), to develop and commercialize MN-221 in China and search for additional compounds to develop. A sublicense would be required under which Zhejiang Sunny would license MN-221 from us. In accordance with the joint venture agreement, in March 2012 we paid \$680,000 for our 30% interest in Zhejiang Sunny. The other parties to the joint venture agreement provided funding for their combined 70% interest. In December 2013, the Board of Directors of Zhejiang Sunny agreed to amend the joint venture agreement to allow for the departure of Zhejiang Medicine Co., Ltd. subject to the approval of the government of the People’s Republic of China. In August 2014, the Chinese government approved the amendment to the joint venture agreement to allow for the departure of Zhejiang Medicine Co., Ltd. and for Beijing Medfron Medical Technologies Co., Ltd. and MediciNova to each have a 50% interest in Zhejiang Sunny. No additional capital was contributed by either remaining party. We have not entered into the sublicense of MN-221 with Zhejiang Sunny as of the date of this prospectus. There is no assurance the sublicense will be executed and there is no assurance that Zhejiang Sunny will be able to proceed with the development of MN-221 in China.

Zhejiang Sunny is a variable interest entity for which we are not the primary beneficiary as we do not have a majority of the board seats and we do not have power to direct or significantly influence the actions of the entity. We therefore account for the activities of Zhejiang Sunny under the equity method whereby we absorb any loss or income generated by Zhejiang Sunny according to our percentage ownership. At September 30, 2016, we reflect a long-term asset on our consolidated balance sheet which represents our investment in Zhejiang Sunny, net of our portion of any generated loss or income.

Depending on decisions we may make as to further clinical development, we may seek to raise additional capital. We may also pursue potential partnerships and potential acquirers of license rights to our programs in markets outside the United States.

Risk Factors

An investment in our common stock is subject to a number of risks and uncertainties. You should carefully consider the following, as well as the information contained under “Risk Factors” beginning on page 7 of this prospectus and in the documents incorporated by reference into this prospectus.

- We have incurred significant operating losses since our inception and expect that we will incur continued losses for the foreseeable future.
- If we fail to obtain the capital necessary to fund our operations, we will be unable to develop and commercialize our product candidates.
- We do not have any products that are approved for commercial sale and therefore do not expect to generate any revenues from product sales in the foreseeable future, if ever.
- We are largely dependent on the success of our MN-166 (ibudilast) and MN-001 (tipelukast) product candidates and we cannot be certain that these product candidates will receive regulatory approval or be successfully commercialized.
- Our ability to compete may decline if we do not adequately protect our proprietary rights.
- Our stock price may be volatile, and you may not be able to resell our shares at a profit or at all.

Company Information

We were incorporated in the State of Delaware in September 2000. Our principal executive offices are located at 4275 Executive Square, Suite 650, La Jolla, CA 92037. Our telephone number is (858) 373-1500. Our website is www.medicinova.com, which includes links to reports we have filed with the Securities and Exchange Commission, or SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus and should not be considered part of this prospectus.

SUMMARY OF PRIVATE PLACEMENT

On May 9, 2013, we entered into a Securities Purchase Agreement with the investors set forth on Schedule A thereto (the "Purchase Agreement"). Pursuant to the Purchase Agreement, we agreed to sell to the investors 1,158,730 shares of our common stock (the "Shares") at a price of \$3.15 per share and warrants to purchase an aggregate of 869,047 shares of our common stock (the "Warrants") with an exercise price of \$3.15 per share (the "Private Placement"). The Warrants expire five years following the issuance date thereof and may be exercised for cash or, if the current market price of our common stock is greater than the per share exercise price, by surrender of a portion of the Warrant in a cashless exercise. The aggregate purchase price for the Shares and the Warrants sold in the Private Placement was \$3.65 million. On May 29, 2013, the Warrant for 119,047 shares of common stock was amended to reflect an exercise price of \$3.38 per share. The Warrants will expire on May 9, 2018.

The offering described above was made pursuant to the exemption provided by Section 4(a)(2) of the Securities Act, and Regulation D promulgated thereunder.

We are using the proceeds from the Private Placement for working capital and general corporate purposes.

THE OFFERING

Common stock offered by us pursuant to this prospectus	Up to 869,047 shares of common stock issuable upon exercise of outstanding Warrants. See “Selling Stockholders” beginning on page 9 of this prospectus.
Common stock to be outstanding assuming cash exercise of the warrants	Up to 35,356,477 shares, assuming the full cash exercise of the outstanding Warrants.
Exercise price of the warrants	\$3.15 per share for the Warrant for 750,000 shares of common stock and \$3.38 per share for the Warrant for 119,047 shares of common stock.
Warrant exercisability and expiration	The Warrants are currently exercisable and expire on May 9, 2018.
Use of proceeds	All proceeds from the sale of shares of common stock under this prospectus will be for the account of the selling stockholders. We will not receive any proceeds from the sale of our common stock offered pursuant to this prospectus. We intend for any proceeds received by us from the exercise of the Warrants to be used to fund our research and development efforts, and for general corporate purposes, including working capital and other general and administrative purposes. See “Use of Proceeds” on page 8 of this prospectus.
NASDAQ Global Market symbol	MNOV
Tokyo Securities Exchange code	4875
Risk factors	Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 7 of this prospectus as well as the other information included in or incorporated by reference in this prospectus for a discussion of factors you should consider carefully before making an investment decision.

The number of shares of our common stock shown above to be outstanding immediately after this offering is based on 34,487,430 shares outstanding as of September 30, 2016 and excludes as of such date:

- 4,980,584 shares of common stock reserved for the exercise of options outstanding at a weighted average exercise price of \$4.16;
- 654,625 shares of common stock reserved for future issuance under our stock incentive plan;
- 1,067,067 shares of common stock reserved for the exercise of warrants outstanding at a weighted-average exercise price of \$3.72; and
- 184,125 shares of common stock reserved for future issuance under our employee stock purchase plan.

Unless otherwise indicated, all information in this prospectus assumes that no options, warrants, shares of common stock or rights exercisable or convertible into shares of common stock were issued after September 30, 2016, and no outstanding options or warrants were exercised after September 30, 2016.

RISK FACTORS

Investing in our securities involves risks. You should carefully consider the risks, uncertainties and other factors described in our most recent Annual Report on Form 10-K, as supplemented and updated by subsequent Quarterly Reports on Form 10-Q and Current Reports on Form 8-K that we have filed or will file with the SEC, and in other documents which are incorporated by reference into this prospectus or any applicable prospectus supplement before investing in any of our securities. Our financial condition, results of operations or cash flows could be materially adversely affected by any of these risks. The risks and uncertainties described in the documents incorporated by reference herein and any accompanying prospectus supplement are not the only risks and uncertainties that you may face.

For more information about our SEC filings, please see “Where You Can Find More Information” and “Information Incorporated by Reference.”

USE OF PROCEEDS

We will not receive any proceeds from the resale of the shares of our common stock by the selling stockholders. We cannot predict when or if the Warrants will be exercised, and it is possible that the Warrants may expire and never be exercised. We intend for a portion of any proceeds received by us from the exercise of the warrants to be used to fund development work for research and development on MN-166 (ibudilast) and MN-001 (tipelukast). We may also use a portion of any such proceeds from the exercise of the Warrants to acquire or invest in complementary businesses, technologies, product candidates or other intellectual property, although we have no present commitments or agreements to do so.

The amounts and timing of these expenditures will depend on a number of factors, such as the timing and progress of our research and development efforts, technological advances and the competitive environment for our product candidates. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the proceeds that may be received by us from exercise of the Warrants. Accordingly, we will retain broad discretion over the use of any such proceeds. Pending use of any proceeds as described above, we intend to temporarily invest the proceeds in short and long-term interest bearing instruments.

DIVIDEND POLICY

We have never declared or paid dividends on our common stock. We currently expect to retain future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Any future determination to pay dividends on our common stock is subject to the discretion of our Board of Directors and will depend upon various factors, including, without limitation, our results of operations and financial condition.

SELLING STOCKHOLDERS

In May 2013, we issued an aggregate of two Warrants to the two selling stockholders in a private placement financing pursuant to the terms of a securities purchase agreement we entered into with the selling stockholders. The Warrants issued in the private placement financing were issued to “accredited investors” as defined in Rule 501(a) under the Securities Act pursuant to an exemption from registration under the Securities Act. The Warrants were exercisable for shares of our common stock at an exercise price of \$3.15 per share. On May 29, 2013, the Warrant for 119,047 shares of common stock was amended to reflect an exercise price of \$3.38 per share

The Warrants may be exercised for cash, or, if the current market price of our common stock is greater than the per share exercise price, by surrender of a portion of the warrant in a cashless exercise.

When we refer to the selling stockholders in this prospectus, we mean those persons listed in the table below, as well as the permitted transferees, pledgees, donees, assignees, successors and others who later come to hold any of the selling stockholders’ interests other than through a public sale.

The selling stockholders may from time to time offer and sell pursuant to this prospectus any or all of the shares of common stock set forth in the following table. There is no requirement for the selling stockholders to sell their shares, and we do not know when, or if, or in what amount the selling stockholders may offer the securities for sale pursuant to this prospectus.

The table below has been prepared based upon the information furnished to us by the selling stockholders as of November 17, 2016. The selling stockholders identified below may have sold, transferred or otherwise disposed of some or all of their shares beneficially held since the date on which the information in the following table is presented in open market transactions or transactions exempt from or not subject to the registration requirements of the Securities Act. Information concerning the selling stockholders may change from time to time and, if necessary, we will supplement this prospectus accordingly. We cannot give an estimate as to whether the selling stockholders will in fact sell any or all of their shares of common stock.

To our knowledge and except as noted below, none of the selling stockholders has, or within the past three years has had, any material relationship with us or any of our affiliates.

Selling Stockholders	Beneficial ownership prior to registration		Shares registered pursuant to this prospectus (maximum number that may be sold)	Beneficial ownership after registration assuming all shares are sold	
	Shares	Percent of Class	Shares registered	Shares	Percentage of Class
Samurai Investments San Diego LLC(1)	2,217,000	6.29%	750,000	1,467,000	4.16%
Fountain Erika LLC(2)	119,047	*	119,047	—	—

*Less than one percent

Beneficial ownership of shares and percentage ownership are determined in accordance with the SEC’s rules. In calculating the number of shares beneficially owned by an individual or entity and the percentage ownership of that individual or entity, shares underlying options, warrants or restricted stock units held by that individual or entity that are either currently exercisable or exercisable within 60 days from the date of this prospectus are deemed outstanding. These shares, however, are not deemed outstanding for the purpose of computing the percentage ownership of any other individual or entity. Unless otherwise indicated and subject to community property laws where applicable, the individuals and entities named in the table above have sole voting and investment power with respect to all shares of our common stock shown as beneficially owned by them. We have based our calculations of the percentage of beneficial ownership on 34,518,278 shares of common stock outstanding as of November 17, 2016.

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- (1) Based on a selling stockholder questionnaire by Hajimi Satomi and Samurai Investments San Diego LLC, and includes (i) 1,000,000 shares of Common Stock and 750,000 shares issuable upon the exercise of a warrant held by Samurai Investments San Diego LLC and (ii) 467,000 shares of Common Stock held by Mr. Satomi, the principal of Samurai Investments San Diego LLC. Hajimi Satomi exercises voting and dispositive control of the shares beneficially held by Samurai Investments San Diego LLC. The principal business address for the stockholders is 501 W. Broadway, Suite 1100, San Diego, California, 92101. Samurai Investments San Diego
- (2) Based on a selling stockholder questionnaire by Hideo Izumi and Fountain Erika LLC, and includes 119,047 shares issuable upon the exercise of a warrant held by Fountain Erika LLC. Hideo Izumi exercises voting and dispositive control of the shares beneficially held by Fountain Erika LLC. The principal business address for the stockholders is 4275 Executive Square, Suite 650, La Jolla, California, 92037.

Tatsuo Izumi, a principal of Fountain Erika LLC, was a member of our board of directors at the time the Warrants were issued in May 2013. In December 2013, Mr. Izumi resigned as a member of our board of directors. Mr. Izumi passed away during the 2016 calendar year and Hideo Izumi exercises voting and dispositive control over the shares held by Fountain Erika LLC.

PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share; and
- a combination of any such methods of sale.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment or supplement to this prospectus amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

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The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act. Underwriters and their controlling persons, dealers and agents may be entitled, under agreements entered into with us and the selling stockholders, to indemnification against and contribution toward specific civil liabilities, including liabilities under the Securities Act.

To facilitate the offering of the shares offered by the selling stockholders, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. This may include over-allotments or short sales, which involve the sale by persons participating in the offering of more shares than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the common stock by bidding for or purchasing shares in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if shares sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the common stock at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

DESCRIPTION OF SECURITIES

Description of Common Stock

This section describes the general terms and provisions of the shares of our common stock, par value \$0.001 per share. This description is only a summary and is qualified in its entirety by reference to the description of our common stock incorporated by reference in this prospectus. Our restated certificate of incorporation, as amended, and our amended and restated bylaws have been filed as exhibits to our periodic reports filed with the SEC, which are incorporated by reference in this prospectus. You should read our restated certificate of incorporation, as amended, and our amended and restated bylaws for additional information before you buy any of our common stock or other securities. See “Where You Can Find More Information.”

We have 100,000,000 shares of authorized common stock. As of September 30, 2016, there were 34,487,430 shares of common stock issued and outstanding. Each holder of common stock is entitled to one vote for each share of common stock held on all matters submitted to a vote of stockholders. We have not provided for cumulative voting for the election of directors in our restated certificate of incorporation, as amended. This means that the holders of a majority of the shares voted can elect all of the directors then standing for election. Subject to preferences that may apply to shares of preferred stock outstanding at the time, the holders of outstanding shares of our common stock are entitled to receive dividends out of assets legally available at the times and in the amounts that our board of directors may determine from time to time. Upon our liquidation, dissolution or winding-up, the holders of common stock are entitled to share ratably in all assets remaining after payment of all liabilities and the liquidation preferences of any outstanding preferred stock. Holders of common stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and non-assessable.

Registration Rights

As of September 30, 2016, the holders of approximately 1,911,781 shares of our common stock are entitled to contractual rights to require us to register those shares under the Securities Act of 1933, as amended (the Securities Act). These rights are provided under the terms of our amended and restated registration rights agreement. We will pay all expenses relating to any such registration, other than underwriting discounts and selling commissions. The registration rights terminate with respect to any holder if all of the following conditions are met: (a) as reflected on our books and records, such holder (together with its affiliates) holds less than 1% of our outstanding common stock (on an as-if-converted to common stock basis), (b) our securities trade on a national securities exchange or list on a national automatic quotation system, in each case, located in the United States, and (c) all shares of common stock issued or issuable upon conversion of the registrable securities held by such holder (and its affiliates) either (i) may be sold pursuant to Rule 144 promulgated under the Securities Act during any ninety (90) day period or (ii) have ceased to be outstanding.

Piggyback Registration Rights. If we propose to register any of our securities under the Securities Act either for our own account or for the account of other stockholders, the holders of shares having registration rights will, subject to certain exceptions, be entitled to include their shares in our registration statement. These piggyback registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration statement under certain circumstances, but not below 25% of the total number of shares covered by the registration statement without the consent of more than 50% of the holders of registrable securities. Such rights have been waived in connection with the offering hereby.

Anti-Takeover Effects of Delaware Law, Our Restated Certificate of Incorporation, as Amended, and Bylaws

Certain provisions of Delaware law, our restated certificate of incorporation, as amended, and our amended and restated bylaws could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids. These provisions are also designed, in part, to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

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Certificate of Incorporation and Bylaws. Our restated certificate of incorporation, as amended, and amended and restated bylaws include provisions that:

- authorize our board of directors to issue, without further action by the stockholders, up to 3,000,000 shares of undesignated preferred stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only at the request of the Chairman of the Board, the Chief Executive Officer or by a resolution duly adopted by the affirmative vote of a majority of our board of directors;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms;
- provide that our directors may be removed only for cause; and
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even if less than a quorum.

Delaware Law. We are subject to the provisions of Section 203 of the General Corporation Law of the State of Delaware regulating corporate takeovers. In general, those provisions prohibit a publicly-held Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless:

- the transaction is approved by the board of directors of the corporation before the date the interested stockholder attained that status;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after the date the business combination is approved by the board of directors of the corporation and authorized at a meeting of stockholders by at least 66-2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines “business combination” to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

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In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by any of these entities or persons.

A Delaware corporation may opt out of these provisions either with an express provision in its original certificate of incorporation or in an amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out, and do not currently intend to opt out of, these provisions. The statute could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us.

Warrants

Warrants Issued in May 2013

In May 2013, we entered into a securities purchase agreement with certain accredited investors pursuant to which we agreed to sell to investors 1,158,730 shares of our common stock at a price of \$3.15 per share and two Warrants to purchase an aggregate of 869,047 shares of our common stock with an exercise price of \$3.15 per share. On May 29, 2013, the Warrant for 119,047 shares of common stock was amended to reflect an exercise price of \$3.38 per share. The Warrants will expire on May 9, 2018. The shares of common stock underlying the Warrants are being offered by this prospectus.

Exercise. Each Warrant may be exercised for cash, or, if the current market price of our common stock is greater than the per share exercise price, by surrender of a portion of such Warrant in a cashless exercise.

Transferability. Subject to compliance with applicable Federal and state securities laws, the Warrants are transferrable by the holder upon surrender of the Warrants to us.

Adjustments. The exercise price and number of the shares of our common stock issuable upon the exercise of the Warrants will be subject to adjustment in the event of any stock dividends and splits, reverse stock splits or similar transaction, as described in the Warrants.

Exchange Listing. We do not intend to list the Warrants on any securities exchange or other trading market.

Exercise Limitation. A holder may not exercise its Warrant if, after giving effect to the exercise, the holder and certain related parties would beneficially own more than 4.99% of our common stock, subject to certain exclusions, but in no event shall a holder's beneficial ownership exceed 9.99% of our common stock.

Waivers and Amendments. Subject to certain exceptions, any term of each of the Warrants may be amended or waived with our written consent and the written consent of the holder of such Warrant.

Rights as a Stockholder. Except as otherwise provided in the warrant or by virtue of such holder's ownership of shares of our common stock, the holder of a warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the warrant.

Warrant Issued in May 2010

In connection with a loan and security agreement with Oxford Finance Corporation, we issued to Oxford Finance Corporation a warrant to purchase 198,020 shares of our common stock in May 2010. The warrant expires on May 10, 2017 and has an exercise price of \$6.06 per share.

Exercise. The warrant may be exercised for cash or by surrender of a portion of such warrant in a cashless exercise.

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Expiration. The warrant will terminate on the earlier of May 10, 2017 and the closing of a merger or consolidation transaction in which we are not the surviving entity.

Transferability. Subject to compliance with applicable Federal and state securities laws, the warrant is transferrable by the holder upon surrender of the warrants to us.

Adjustments. The exercise price and number of the shares of our common stock issuable upon the exercise of the warrant will be subject to adjustment in the event of any stock dividends and splits, reverse stock splits or similar transaction, as described in the warrant.

Exchange Listing. We do not intend to list the warrant on any securities exchange or other trading market.

Waivers and Amendments. The warrant may be amended or waived with the consent of the holder and us.

Rights as a Stockholder. Except as otherwise provided in the warrant or by virtue of such holder's ownership of shares of our common stock, the holder of a warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the warrant.

Transfer Agent

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Listing on The Nasdaq Global Market and the Jasdaq Market of the Tokyo Securities Exchange

Our common stock is listed on The Nasdaq Global Market under the symbol "MNOV" and on the Tokyo Securities Exchange under code 4875.

Description of Preferred Stock

As of September 30, 2016, we had 3,000,000 shares of authorized preferred stock, par value \$0.01 per share, none of which were issued and outstanding. We may issue preferred stock, in series, with such designations, powers, preferences and other rights and qualifications, limitations or restrictions as our board of directors may authorize, without further action by our stockholders, including:

- the distinctive designation of each series and the number of shares that will constitute the series;
- the voting rights, if any, of shares of the series and the terms and conditions of the voting rights;
- the dividend rate on the shares of the series, the dates on which dividends are payable, any restriction, limitation or condition upon the payment of dividends, whether dividends will be cumulative, and the dates from and after which dividends shall accumulate;
- the prices at which, and the terms and conditions on which, the shares of the series may be redeemed, if the shares are redeemable;
- the terms and conditions of a sinking or purchase fund for the purchase or redemption of shares of the series, if such a fund is provided;
- any preferential amount payable upon shares of the series in the event of the liquidation, dissolution or winding up of, or upon the distribution of any of our assets; and
- the prices or rates of conversion or exchange at which, and the terms and conditions on which, the shares of the series may be converted or exchanged into other securities, if the shares are convertible or exchangeable.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus is being passed upon for us by Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP, San Diego, California.

EXPERTS

The consolidated financial statements as of and for the year ended December 31, 2015 and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2015 incorporated by reference in this Prospectus have been so incorporated in reliance on the reports of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting.

The consolidated financial statements of MediciNova, Inc. appearing in MediciNova, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2014, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-3 with the SEC under the Securities Act of 1933. This prospectus is part of the registration statement but the registration statement includes and incorporates by reference additional information and exhibits. We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy the registration statement and any other document we file with the SEC at the public reference room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site that contains reports, proxy and information statements and other information regarding companies, such as ours, that file documents electronically with the SEC. The address of that site on the world wide web is <http://www.sec.gov>. The information on the SEC's web site is not part of this prospectus, and any references to this web site or any other web site are inactive textual references only.

INFORMATION INCORPORATED BY REFERENCE

The SEC permits us to "incorporate by reference" the information contained in documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents rather than by including them in this prospectus and any accompanying prospectus supplement. Information that is incorporated by reference is considered to be part of this prospectus and you should read it with the same care that you read this prospectus. Later information that we file with the SEC will automatically update and supersede the information that is either contained, or incorporated by reference, in this prospectus, and will be considered to be a part of this prospectus from the date those documents are filed. We have filed with the SEC, and incorporate by reference in this prospectus (excluding any portions of any Form 8-K that are not deemed "filed" pursuant to the General Instructions of Form 8-K):

- our Annual Report on Form 10-K for the year ended December 31, 2015 (filed on February 25, 2016);
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2016, June 30, 2016 and September 30, 2016 (filed on April 27, 2016, July 26, 2016 and October 25, 2016, respectively);
- our Current Reports on Form 8-K filed with the SEC on March 31, 2016, June 13, 2016 and September 16, 2016 (other than the portions of any of these reports furnished but not filed pursuant to SEC rules and the exhibits filed on such form that relate to such portions);

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- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2015 from our definitive proxy statement on Schedule 14A, filed with the SEC on April 27, 2016; and
- the description of our common stock contained in our Registration Statement on Form 8-A filed with the SEC on January 26, 2005.

We are not, however, incorporating any documents or information that we are deemed to furnish and not file in accordance with SEC rules (including with respect to the above-listed periodic reports). We also incorporate by reference all additional documents that we file with the SEC under the terms of Section 13(a), 13(c), 14 or 15(d) of the Exchange Act that are made after the initial filing date of the registration statement of which this prospectus is a part and the effectiveness of the registration statement, as well as between the date of this prospectus and the termination of any offering of securities offered by this prospectus.

You may request a copy of any or all of the documents incorporated by reference but not delivered with this prospectus, at no cost, by writing or telephoning us at the following address and number: Investor Relations, MediciNova, Inc., 4275 Executive Square, Suite 650, La Jolla, California 92037, telephone (858) 373-1500. We will not, however, send exhibits to those documents, unless the exhibits are specifically incorporated by reference in those documents.



MEDICINOVA, INC.

**869,047 Shares of Common Stock
Issuable Upon Exercise of Outstanding Warrants**

PROSPECTUS

December 9, 2016