MEDICINOVA INC
Form 424B5
May 22, 2015
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Registration No. 333-185022

PROSPECTUS SUPPLEMENT

(to the Prospectus dated December 3, 2012)

MEDICINOVA, INC.

$30,000,000

Common Stock

We have entered into an at-the-market issuance sales agreement, or sales agreement, with MLV & Co. LLC, or MLV, relating to shares of our common stock offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the sales agreement, subject to effectiveness of the registration statement of which this prospectus is a part, we may offer and sell shares of our common stock, $0.001 par value per share, having an aggregate offering price of up to $30,000,000 from time to time to and/or through MLV.

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. The last reported sale price of our common stock on The NASDAQ Global Market on May 21, 2015 was $4.00 per share.

Sales of our common stock, if any, under this prospectus supplement and the accompanying prospectus may be made in sales deemed to be at-the-market equity offerings as defined in Rule 415 promulgated under the Securities Act of 1933, as amended (the Securities Act), including sales made directly on or through The NASDAQ Global Market, the existing trading market for our common stock, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices and/or any other method permitted by law. MLV will act as a sales agent on a best efforts basis using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between MLV and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to MLV for sales of common stock sold pursuant to the sales agreement will be up to 4% of the gross proceeds from each sale. We have also agreed to reimburse MLV for certain of its expenses. In connection with the sale of the common stock on our behalf, MLV will be deemed to be an underwriter within the meaning of the Securities Act, and the compensation of MLV will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to MLV with respect to certain liabilities, including liabilities under the Securities Act. See Plan of Distribution for more information about these arrangements.

Before buying shares of our common stock, you should carefully consider the risk factors described in Risk Factors beginning on page S-4 of this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement and the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is May 22, 2015.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, including the documents incorporated by reference, which describes the specific terms of this offering. The second part, the accompanying prospectus, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. We urge you to carefully read this prospectus supplement and the accompanying prospectus, and the documents incorporated herein and therein, before buying any of the securities being offered under this prospectus supplement. This prospectus supplement may add to, update or change information contained in the accompanying prospectus. To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying prospectus or any documents incorporated by reference therein, the statements made in this prospectus supplement will be deemed to modify or supersede those made in the accompanying prospectus and such documents incorporated by reference therein. You should also read and consider the information contained in the documents identified under the headings Incorporation of Certain Documents by Reference and Where You Can Find More Information.

You should rely only on the information contained in, or incorporated by reference into, this prospectus supplement, and the accompanying prospectus. We have not authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus supplement and the accompanying prospectus. You should not rely on any unauthorized information or representation. This prospectus supplement is an offer to sell only the securities offered hereby, and only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus supplement and the accompanying prospectus is accurate only as of the date on the front of the applicable document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus supplement or the accompanying prospectus, or any sale of a security.

This prospectus supplement, the accompanying prospectus, and the information incorporated herein and therein by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement or the accompanying prospectus are the property of their respective owners.

All references in this prospectus supplement and the accompanying prospectus to MediciNova, the Company, we, us our, or similar references refer to MediciNova, Inc. and its subsidiaries on a consolidated basis, except where the context otherwise requires or as otherwise indicated.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere in or incorporated by reference into this prospectus supplement. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our securities. For a more complete understanding of our company and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus supplement and the accompanying prospectus, including the information incorporated by reference into this prospectus supplement and the accompanying prospectus, and the information included in any free writing prospectus that we have authorized for use in connection with this offering. If you invest in our securities, you are assuming a high degree of risk. See Risk Factors.

About MediciNova, Inc.

Our Business

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 exacerbation of asthma and MN-029 (denibulin) for solid tumor cancers.

MN-166 (ibudilast) is currently in development for several different neurological disorders. We completed a Phase 2 clinical trial of MN-166 for the treatment of multiple sclerosis (MS) in 2008, in which positive safety and neuroprotective efficacy indicators were observed. We have successfully partnered with investigators on an ongoing Phase 2b clinical trial of MN-166 in primary progressive and secondary progressive MS which is conducted by NeuroNEXT and funded by the NIH s National Institute on Neurological Diseases and Stroke (NINDS). In May 2015, we announced that the MN-166 trial is now fully enrolled. In August 2014, we announced plans to initiate a clinical trial of MN-166 in amyotrophic lateral sclerosis (ALS), and this trial is currently ongoing. In February 2015, we announced that the ALS study had enrolled 30 of the 60 subjects planned for participation, and in April 2015, we announced that an independent safety medical monitor had completed an interim safety review of the first 21 subjects enrolled in the study and found there were no safety or tolerability concerns in the treatment group compared with the placebo treatment group after three months of treatment. Based on the findings from the interim safety review, the study is continuing as planned. In the area of addiction, investigators at the University of California, Los Angeles (UCLA) completed a Phase 1b clinical trial of MN-166 in methamphetamine (MA)-dependent volunteers, funded by the National Institute on Drug Abuse (NIDA), and the results were presented at the Annual Meeting of the College on Problems of Drug Dependence (CPDD) in June 2013. In September 2012, we announced approval and funding by NIDA of a Phase 2 clinical trial studying the use of MN-166 for the treatment of MA addiction. In collaboration with UCLA, this clinical trial commenced in 2013 and is currently ongoing. In 2010, investigators at Columbia University and the New York State Psychiatric Institute (NYSPI) completed a Phase 1b/2a clinical trial of MN-166 in opioid withdrawal that was funded by NIDA. Investigators at Columbia University and the NYSPI are currently conducting a NIDA-funded, Phase 2a clinical trial to evaluate the efficacy of MN-166 in the treatment of patients addicted to prescription opioids or heroin. Positive interim data from this study was reported in August 2014. In August 2013, we announced that researchers at UCLA were granted approval and funding by National Institute on Alcoholism and Alcohol Abuse (NIAAA) of a clinical trial studying the use of MN-166 for the treatment of alcohol dependence, and the study is currently ongoing.

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MN-001 (tipelukast) is currently in development for fibrotic diseases such as nonalcoholic steatohepatitis (NASH) and idiopathic pulmonary fibrosis (IPF). In 2014, we announced positive results of MN-001 in two different NASH mouse models and began preparing for clinical development of MN-001 for the treatment of NASH in the U.S. In January 2015, we announced that the IND (Investigation New Drug) application for MN-001 for the treatment of NASH is open with the FDA (U.S. Food and Drug Administration) and the FDA agreed that we may proceed with a Phase 2 study. In April 2015, we announced that the FDA has granted Fast Track Designation for MN-001 for the treatment of NASH with fibrosis. Fast Track is a process designed to facilitate the development and expedite the review of drugs that are intended to treat serious or life-threatening diseases and demonstrate the potential to address unmet medical needs for such diseases. An important feature of the FDA s Fast Track program is that it emphasizes frequent communication between the FDA and the sponsor throughout the entire drug development and review process to improve the efficiency of product development. In June 2014, we announced positive results of MN-001 in a mouse model of pulmonary fibrosis and have begun preparations to pursue clinical development of MN-001 in IPF. In October 2014, we announced that the FDA granted Orphan-Drug designation to MN-001 for treatment of IPF, which will provide seven years of marketing exclusivity if MN-001 is approved for IPF. In February 2015, we announced that FDA has approved the protocol for a clinical trial of MN-001 (tipelukast) for the treatment of moderate to severe IPF. Importantly, due to safety data from previous clinical studies of MN-001, FDA has agreed that we may proceed with a Phase 2 study as the first clinical trial of MN-001 in IPF.

We completed a Phase 2 clinical trial of MN-221 (bedoradrine) for the treatment of acute exacerbations of asthma treated in the emergency room and conducted an End-of-Phase 2 (EOP2) meeting with the FDA in October 2012. We plan to conduct further MN-221 development according to the feedback received from the FDA following the EOP2 meeting. In that meeting, the FDA identified the risk/benefit profile of MN-221 as a focal point for further development and advised that a clinical outcome, such as a reduction in hospitalizations, would need to be a pivotal trial primary endpoint. Previously completed Phase 2 studies have evaluated the potential for MN-221 to reduce hospitalizations due to acute exacerbations of asthma. We believe the appropriate clinical development for MN-221 will involve conducting dose regimen and acute exacerbations of asthma trial design optimization studies prior to commencing pivotal trials. Currently, we are working to identify a partner for financial support before further clinical development is commenced.

We have acquired licenses to MN-166, MN-001, MN-221, and MN-029 for the development of these product candidates. We have pursued development of these product candidates in various indications including progressive MS, ALS, various addictions, NASH, IPF, acute exacerbations of asthma and solid tumor cancers.

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 supplement or the accompanying prospectus and should not be considered part of this prospectus supplement or the accompanying prospectus.

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THE OFFERING

Common stock offered by us pursuant to this prospectus supplement	Shares having an aggregate offering price of up to $30,000,000.
Common stock to be outstanding after this offering	Up to 32,137,921 shares, assuming the sale of 7,500,000 shares of our common stock in this offering at an offering price of $4.00 per share, which was the last reported sale price of our common stock on The NASDAQ Global Market on May 21, 2015. The actual number of shares issued will vary depending on the actual sales prices under this offering.
Manner of offering	At-the-market offering that may be made from time to time through MLV & Co. LLC. See Plan of Distribution on page S-10.
Use of proceeds	We intend to use the net proceeds from this offering 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 S-7.
NASDAQ Global Market symbol	MNOV
Tokyo Securities Exchange code	4875
Risk factors	This investment involves a high degree of risk. See Risk Factors beginning on page S-4 of this prospectus supplement as well as the other information included in or incorporated by reference in this prospectus supplement and the accompanying 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 24,637,921 shares outstanding as of March 31, 2015 and excludes as of such date:

- 4,096,969 shares of common stock reserved for the exercise of options outstanding at a weighted average exercise price of $4.70;
- 1,710,825 shares of common stock reserved for future issuance under our stock incentive plan;

3,658,567 shares of common stock reserved for the exercise of warrants outstanding at a weighted-average exercise price of $3.60;

209,349 shares of common stock reserved for future issuance under our employee stock purchase plan; and

2,200,000 shares of common stock reserved for the conversion of shares of Series B Convertible Preferred Stock.

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RISK FACTORS

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described below and those under the heading Risk Factors contained in our most recent annual report on Form 10-K and our quarterly reports on Form 10-Q, which have been filed with the SEC and are incorporated by reference in this prospectus, as well as any updates thereto contained in subsequent filings with the SEC or any applicable prospectus supplement or free writing prospectus, before deciding whether to purchase any of the securities being registered pursuant to the registration statement of which this prospectus is a part. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities, and the occurrence of any of these risks might cause you to lose all or a part of your investment. Moreover, the risks described are not the only risks that we face. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations.

Risks Related to this Offering

Sales of our common stock in this offering, or the perception that such sales may occur, could cause the market price of our common stock to fall.

We may issue and sell shares of our common stock for aggregate gross proceeds of up to $30,000,000 from time to time in connection with this offering. The issuance and sale from time to time of these new shares of common stock, or our ability to issue these new shares of common stock in this offering, could have the effect of depressing the market price of our common stock.

Our management team will have broad discretion over the use of the net proceeds from this offering.

Our management will use its discretion to direct the net proceeds from this offering. We intend to use all of the net proceeds, together with cash on hand, for research and development and general corporate purposes. General corporate purposes may include working capital, capital expenditures, development costs, strategic investments or possible acquisitions. Our management s judgments may not result in positive returns on your investment and you will not have an opportunity to evaluate the economic, financial or other information upon which our management bases its decisions.

If you purchase the common stock sold in this offering, you will experience immediate dilution in your investment. You may experience further dilution if we issue additional equity securities in future fundraising transactions.

The offering price per share in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering. Assuming we sell 7,500,000 shares in this offering at an assumed offering price of $4.00 per share, and after deducting the estimated offering expenses payable by us in this offering, you will experience immediate dilution of $2.905 per share, representing the difference between our as adjusted net tangible book value per share as of March 31, 2015 after giving effect to this offering and the assumed offering price. The exercise of outstanding stock options and warrants may result in further dilution of your investment. See the section entitled Dilution below for a more detailed illustration of the dilution you would incur if you participate in this offering.

We do not anticipate declaring any cash dividends on our common stock. Investors in this offering may never obtain a return on their investment.

We have never declared or paid cash dividends on our common stock and do not plan to pay any cash dividends in the foreseeable future. Our current policy is to retain all funds and earnings for use in the operation and expansion of our business. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for the foreseeable future for holders of our common stock.

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FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus, the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering contain forward-looking statements within the meaning of Section 27A of the Securities Act, or 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, plans, anticipates, believes, estimates, projects, predicts, potential and similar expressions intended to iden 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 supplement 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.

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You should read this prospectus supplement, the accompanying prospectus, the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering 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.

You should rely only on the information contained, or incorporated by reference, in this prospectus supplement, the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering. We have not authorized anyone to provide you with different information. The securities offered under this prospectus are not being offered in any state where the offer is not permitted. You should not assume that the information contained in this prospectus supplement or the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering is accurate as of any date other than the date on the front of this prospectus supplement or the accompanying prospectus, as applicable, or that any information incorporated by reference in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the date of the document so incorporated by reference. Unless required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements.

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USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities under this prospectus supplement to fund our research and development efforts, and for general corporate purposes, including working capital. Specifically, we intend to use a portion of such net proceeds to fund development work for research and development on MN-166 (ibudilast) and MN-001 (tipelukast). We may also use a portion of the net proceeds 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 supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. Accordingly, we will retain broad discretion over the use of these proceeds. Pending use of the net proceeds as described above, we intend to temporarily invest the proceeds in short and long-term interest bearing instruments. Pending application of the net proceeds as described above, we expect to invest the net proceeds in short-term, investment-grade securities.

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DILUTION

Our net tangible book value as of March 31, 2015 was $6,546,090, or $0.266 per share of common stock. Net tangible book value per share is calculated by subtracting our total liabilities from our total tangible assets, which is total assets less intangible assets, and dividing this amount by the number of shares of common stock outstanding. After giving effect to the sale of our common stock in the aggregate amount of $30,000,000 at an assumed offering price of $4.00 per share, the last reported sale price of our common stock on The NASDAQ Global Market on May 21, 2015, and after deducting estimated offering commissions and expenses payable by us, our net tangible book value as of March 31, 2015 would have been $35,176,090, or $1.095 per share of common stock. This represents an immediate increase in the net tangible book value of $0.829 per share to our existing stockholders and an immediate and substantial dilution in net tangible book value of $2.905 per share to new investors. The following table illustrates this per share dilution:

Assumed offering price per share		$ 4.000
Net tangible book value per share as of March 31, 2015	$ 0.266	
Increase per share attributable to new investors	$ 0.829	
As-adjusted net tangible book value per share after this offering		$ 1.095
Net dilution per share to new investors		$ 2.905

The table above assumes for illustrative purposes that an aggregate of 7,500,000 shares of our common stock are sold at a price of $4.00 per share, the last reported sale price of our common stock on The NASDAQ Global Market on May 21, 2015, for aggregate gross proceeds of $30,000,000. The shares sold in this offering, if any, will be sold from time to time at various prices. An increase of $0.25 per share in the price at which the shares are sold from the assumed offering price of $4.00 per share shown in the table above, assuming all of our common stock in the aggregate amount of $30,000,000 is sold at that price, would not impact our adjusted net tangible book value; however, the adjusted net tangible book value per share after the offering would increase by $0.015 per share due to the decrease in shares sold in the offering to 7,058,823 and would increase the dilution in net tangible book value per share to new investors in this offering to $3.140 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of $0.25 per share in the price at which the shares are sold from the assumed offering price of $4.00 per share shown in the table above, assuming all of our common stock in the aggregate amount of $30,000,000 is sold at that price, would not impact our adjusted net tangible book value; however, the adjusted net tangible book value per share after the offering would decrease by $0.017 per share due to the increase in shares sold in the offering to 8,000,000 and would decrease the dilution in net tangible book value per share to new investors in this offering to $2.672 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

The calculations above are based upon 24,637,921 shares of common stock outstanding as of March 31, 2015 and exclude:

- 4,096,969 shares of common stock reserved for the exercise of options outstanding at a weighted average exercise price of $4.70;

- 1,710,825 shares of common stock reserved for future issuance under our stock incentive plan;

3,658,567 shares of common stock reserved for the exercise of warrants outstanding at a weighted-average exercise price of $3.60;

209,349 shares of common stock reserved for future issuance under our employee stock purchase plan; and

2,200,000 shares of common stock reserved for the conversion of shares of Series B Convertible Preferred Stock.

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Subsequent to March, 31, 2015, we issued an aggregate of 242,500 shares of common stock, consisting of 45,000 shares sold under our prior at-the-market offering program and 197,500 shares issued pursuant to the exercise of warrants.

PRICE RANGE OF COMMON STOCK

Since December 7, 2006, our common stock has been listed on The NASDAQ Global Market under the symbol MNOV. Prior to that time there was no public market for our stock. The following table lists quarterly information on the price range of our common stock based on the high and low reported sale prices for our common stock as reported by The NASDAQ Global Market for the periods indicated below, respectively.

		High	Low
2013			
	First Quarter	$ 3.67	$ 1.53
	Second Quarter	4.70	2.26
	Third Quarter	2.76	2.25
	Fourth Quarter	3.10	1.91
2014			
	First Quarter	$ 5.25	$ 1.99
	Second Quarter	2.25	1.66
	Third Quarter	3.38	1.86
	Fourth Quarter	4.80	2.82
2015			
	First Quarter	$ 4.25	$ 3.03
	Second Quarter to date	5.90	3.33

On May 21, 2015, the last reported sale price of our common stock on The NASDAQ Global Market was $4.00 per share. As of such date, there were approximately 8,400 holders of record of our common stock.

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.

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PLAN OF DISTRIBUTION

We have entered into an at-the-market issuance sales agreement, or sales agreement, with MLV & Co. LLC, or MLV, under which we may issue and sell shares of our common stock having aggregate sales proceeds of up to $30,000,000 from time to time through MLV, which will act as our sales agent. MLV may sell the common stock by any method that is deemed to be an at-the-market offering as defined in Rule 415 promulgated under the Securities Act, including sales made directly on or through The NASDAQ Stock Market LLC or any other existing trading market for the common stock or to or through a market maker. MLV may also sell the common stock in negotiated transactions, subject to our prior approval.

Each time we wish to issue and sell common stock under the sales agreement, we will notify MLV of the number of shares to be issued, the dates on which such sales are anticipated to be made, and any minimum price below which sales may not be made. Once we have so instructed MLV, unless MLV declines to accept the terms of such notice, MLV has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of MLV under the sales agreement to sell our common stock are subject to a number of customary conditions that we must meet.

Settlement for shares of our common stock will occur on the third trading day following the date on which the sale was made. Sales of our common stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and MLV may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

We will pay MLV a commission of up to 4% of the gross proceeds from each sale. We also agreed to reimburse MLV for its legal expenses up to $25,000 in the aggregate. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. In connection with the sale of the common stock on our behalf, MLV will be deemed to be an underwriter within the meaning of the Securities Act as amended, and the compensation of MLV will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to MLV with respect to certain civil liabilities, including liabilities under the Securities Act. We estimate that the total expenses for the offering, excluding compensation payable to MLV under the terms of the sales agreement, will be up to approximately $170,000.

The offering of our common stock pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all of our common stock provided for in this prospectus supplement, or (ii) the termination of the sales agreement as permitted therein.

This summary of the material provisions of the sales agreement does not purport to be a complete statement of its terms and conditions. A copy of the sales agreement is filed with the SEC and is incorporated by reference into the registration statement of which this prospectus supplement is a part. See Where You Can Find More Information below.

To the extent required by Regulation M under the Exchange Act, MLV will not engage in any market making activities involving our common stock while the offering is ongoing under this prospectus.

MLV and its affiliates may in the future provide various investment banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees.

In addition, the sales agreement provides that we will not (i) take any action designed to cause or result in, or that constitutes or would reasonably be expected to constitute, the stabilization or manipulation of the price of any of our securities to facilitate the sale or resale of common stock, (ii) sell, bid for, or purchase common stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the common stock under the sales agreement other than MLV or (iii) engage in solicitations of sales in Japan in a manner that would not be exempt from registration or qualification requirements of the offering regulations under Japanese securities laws.

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LEGAL MATTERS

The validity of the common stock offered by this prospectus supplement and the accompanying prospectus will be passed upon for us by Pillsbury Winthrop Shaw Pittman LLP, San Diego, California. Certain legal matters will be passed upon for MLV & Co. LLC by K&L Gates LLP, Orange County, California.

EXPERTS

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, and the effectiveness of MediciNova, Inc. s internal control over financial reporting as of December 31, 2014, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports 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

This prospectus supplement and the accompanying prospectus are part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and do not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus supplement or the accompanying prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus supplement and the accompanying prospectus for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC s website at www.sec.gov. You may also read and copy any document we file at the SEC s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

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INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference information from other documents that we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus. Information contained in this prospectus supplement and the accompanying prospectus and information that we file with the SEC in the future and incorporate by reference into this prospectus supplement and the accompanying prospectus will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings (other than Current Reports on Form 8-K furnished under Item 2.02 or Item 7.01 and exhibits filed on such form that are related to such items) we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement and before the sale of all the securities covered by this prospectus supplement:

- our Annual Report on Form 10-K for the year ended December 31, 2014 (filed on March 12, 2015);
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2015 (filed on May 11, 2015);
- our Current Reports on Form 8-K filed with the SEC on April 3, 2015, April 29, 2015 and May 22, 2015 (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);
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2014 from our definitive proxy statement on Schedule 14A, filed with the SEC on April 29, 2015; and
- the description of our common stock contained in our registration statement on Form S-3, filed with the SEC on November 16, 2012, including any amendment or reports filed for the purpose of updating such description (Registration No. 333-185022).

You can request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

MediciNova, Inc.

4275 Executive Square, Suite 650

San Diego, CA 92037

(858) 373-1500

Attn: Investor Relations

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PROSPECTUS

$100,000,000

MEDICINOVA, INC.

Common Stock

Preferred Stock

Warrants to Purchase Common Stock, Preferred Stock or Debt Securities

Debt Securities

We may from time to time offer to sell any combination of common stock; preferred stock; warrants to purchase common stock, preferred stock or debt securities; and debt securities, each as described in this prospectus, in one or more offerings. The aggregate initial offering price of all securities sold under this prospectus will not exceed $100,000,000.

Of the $100,000,000 of our securities that we may issue, we may issue up to $18,807,665 of shares of our common stock to Aspire Capital Fund, LLC, or Aspire Capital, pursuant to a Common Stock Purchase Agreement between us and Aspire Capital dated August 20, 2012, which we refer to as the Aspire Capital Agreement. The purchase price for shares of stock is based upon one of two formulas, depending on the type of purchase notice we present to Aspire Capital. The purchase price for our stock sold pursuant to a regular purchase notice is the lower of (i) the lowest sale price on the date of sale and (ii) the arithmetic average of the three lowest closing sale prices for our common stock during the 12 consecutive business days ending on the business day immediately preceding the date of sale. The purchase price for our stock sold pursuant to a volume-weighted average price purchase notice is the lower of (i) the closing sale price on the date of sale and (ii) 95% of the volume-weighted average price for our common stock traded on the NASDAQ Global Market for the purchase date (or (a) if trading volume exceeds a certain limit as specified in the Aspire Capital Agreement or (b) if the sale price of the common stock falls below a certain threshold as specified in the Aspire Capital Agreement, the purchase price is 95% of the volume-weighted average price for the trading volume up to such time).

This prospectus provides a general description of the securities we may offer. Each time we sell securities, we will provide specific terms of the securities offered in a supplement to this prospectus. The prospectus supplement may also add, update or change information contained in this prospectus. You should read this prospectus and the applicable prospectus supplement carefully before you invest in any securities. This prospectus may not be used to consummate a sale of securities unless accompanied by the applicable prospectus supplement.

We will sell these securities to or through underwriters or dealers, directly to a limited number of purchasers or a single purchaser, through agents or through a combination of any of these methods of sale, as designated from time to time. If any agents or underwriters are involved in the sale of any of these securities, the applicable prospectus supplement will provide the names of the agents or underwriters and any applicable fees, commissions or discounts.

Our common stock is listed on the NASDAQ Global Market, or Nasdaq, under the symbol MNOV and on the Jasdaq Market (formerly the Hercules Market until its closure in 2010) of the Osaka Securities Exchange, or the OSE, under the code 4875. On November 15, 2012, the closing price of our common stock on Nasdaq was $1.88.

The number of outstanding shares of our common stock, par value $0.001 per share, as of November 15, 2012 was 17,253,125.

Investing in our securities involves risks. See Risk Factors on page 5 of this prospectus and in the applicable prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is December 3, 2012.

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ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, utilizing a shelf registration process. Under this shelf registration process, we may offer to sell any combination of the securities described in this prospectus in one or more offerings up to a total dollar amount of $100,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities under this shelf registration, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. To the extent that any statement that we make in a prospectus supplement is inconsistent with statements made in this prospectus, the statements made in this prospectus will be deemed modified or superseded by those made in the prospectus supplement, as appropriate. You should read both this prospectus and any prospectus supplement, including all documents incorporated herein or therein by reference, together with additional information described under Where You Can Find More Information.

You should rely only on the information that we have provided or incorporated by reference in this prospectus, any prospectus supplement, any free writing prospectus or other written communication we may authorize to be delivered to you. We have not, and have not authorized anyone else, to provide you with different or additional information. This prospectus, any prospectus supplement, any free writing prospectus and any other written communication do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they specifically relate, nor does this prospectus, any prospectus supplement, any free writing prospectus or any other written communication constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate as of any date other than the date on the front cover of this prospectus, the prospectus supplement or any related free writing prospectus, as applicable, or that the information contained in any document incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security. You should not consider any information in this prospectus or in the documents incorporated by reference herein, any prospectus supplement, any free writing prospectus or other written communication to be investment, legal or tax advice. We encourage you to consult your own counsel, accountant and other advisors for legal, tax, business, financial and related advice regarding an investment in our securities.

As used in this prospectus, MediciNova, we, our and us refer to MediciNova, Inc. and its subsidiaries, unless stated otherwise or the context requires otherwise.

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SUMMARY

About MediciNova, Inc.

We are a development stage biopharmaceutical company focused on acquiring and developing novel, small molecule therapeutics for the treatment of serious diseases with unmet medical needs with a specific focus on the U.S. market. Through strategic alliances, primarily with Japanese pharmaceutical companies, we hold rights to a diversified portfolio of clinical and preclinical product candidates which we believe provide significant commercial opportunity for the Company. In December 2009 we acquired Avigen Inc., or Avigen, a biopharmaceutical company that focused on identifying and developing differentiated products to treat patients with serious disorders, whose potential product candidate is a macrophage migration inhibitory and a glial attenuator for central nervous system, or CNS, disorders such as neuropathic pain, opioid addiction and withdrawal and methamphetamine addiction.

Since our inception, we have acquired licenses to eight compounds for the development of ten product candidates which include clinical development for the treatment of acute exacerbations of asthma, multiple sclerosis (MS) and other central nervous system (CNS) disorders, bronchial asthma, interstitial cystitis (IC), solid tumor cancers, generalized anxiety disorders/insomnia, preterm labor and urinary incontinence. Two of such compounds have been in preclinical development for the treatment of thrombotic disorders.

At present, we are focusing our resources on the following prioritized product development programs:

MN-221 for the treatment of acute exacerbations of asthma and COPD exacerbations, for which we initiated a Phase 2 clinical trial (MN-221-CL-007) in the first quarter of 2009 to evaluate the safety and efficacy of MN-221 in patients with acute exacerbations of asthma treated in the emergency room. On March 21, 2012, we announced completion of the 176 patient enrollment of the Phase 2 MN-221-CL-007 clinical trial and on May 23, 2012, we announced that preliminary trial results did not statistically meet the primary endpoint, improvement in FEV1 (Forced Expiratory Volume in One Second) compared to placebo. On October 22, 2012 we met with the FDA to review future development of this product candidate. Although discussions have not been finalized, during the meeting the FDA identified the risk/benefit profile of MN-221 as a focal point for any further development of MN-221 and advised that a reduction in hospitalizations would need to be a pivotal trial primary endpoint. We are considering the design, costs and timing of potential future clinical trials of MN-221 and will determine its development strategy following the completion of our review. In 2010 we completed MN-221 COPD development, which included a Phase 1b clinical trial in patients with stable, moderate to severe COPD. In the first quarter of 2012 we initiated an additional Phase 1b/2a COPD clinical trial (MN-221 CL-012), and on August 23, 2012 we announced positive preliminary trial results.

MN-166, an ibudilast-based product development, for which we continue to pursue discussions with potential partners and other strategic collaborations. An MN-166 Phase 2 clinical trial in MS was completed in Eastern Europe in 2008 wherein positive safety and neuroprotective efficacy indicators were obtained, thus, directing next stage development towards a Phase 2b progressive MS indication. Limited animal safety and product manufacturing and stability development has been completed. In the area of drug addiction, a Phase 1b/2a opioid withdrawal clinical trial funded by the National Institute on Drug Abuse, or NIDA, was completed at the end of 2010. A Phase 1b NIDA-funded clinical trial in methamphetamine-dependent volunteers with expert investigators at UCLA initiated in the fourth quarter of 2010 and is currently enrolling patients. A headache and pain specialist in Australia initiated an investigator sponsored Phase 2 clinical trial of MN-166 as a potential new pharmacotherapy for medication overuse headache that is expected to complete enrollment at the end of 2012. In September 2012 we announced approval and funding by NIDA of a Phase 2 clinical trial.

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