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

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**FORM S-8**  
**REGISTRATION STATEMENT**  
*Under*  
**THE SECURITIES ACT OF 1933**

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**MEDICINOVA, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**

(State or other jurisdiction of incorporation or organization)

**33-0927979**

(I.R.S. Employer Identification No.)

**4350 La Jolla Village Drive, Suite 950**

**San Diego, CA 92122**

(Address of Principal Executive Offices)

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**MediciNova, Inc. Amended and Restated 2004 Stock Incentive Plan**

(Full title of the plans)

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**Yuichi Iwaki, M.D., Ph.D.**

**MediciNova, Inc.**

**President and Chief Executive Officer**

**4350 La Jolla Village Drive, Suite 950**

**San Diego, CA 92122**

**(858) 373-1500**

(Name, address and telephone number, including area code, of agent for service)

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*Copy to:*

**David R. Snyder, Esq.**

**Pillsbury Winthrop Shaw Pittman LLP**

**501 West Broadway, Suite 1100**

**San Diego, California 92101**

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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Non-accelerated filer

(Do not check if smaller reporting company)

Accelerated filer

Smaller reporting company

**CALCULATION OF REGISTRATION FEE**

Title of Securities To Be Registered (1)	Amount to Be Registered (2)	Proposed Maximum Offering Price per Share (3)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, \$0.001 par value per share: To be issued under the MediciNova, Inc. Amended and Restated 2004 Stock Incentive Plan	1,000,000 shares	\$4.55	\$4,550,000	\$178.82

- (1) The securities to be registered include options and rights to acquire shares of the Registrant's common stock.
- (2) This Registration Statement shall also cover any additional shares of the Registrant's common stock that become issuable by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the Registrant's receipt of consideration, which results in an increase in the number of outstanding shares of the Registrant's common stock.
- (3) Offering prices of shares and options to purchase shares that have not yet been granted as of the date of this Registration Statement are estimated pursuant to Rules 457(c) and 457(h) under the Securities Act of 1933, as amended, solely for the purposes of calculating the registration fee, based on the average of the high and low prices of the Common Stock as reported on the Nasdaq Global Market on June 19, 2008.

## EXPLANATORY NOTE

MediciNova, Inc. (the “Registrant”) previously filed Registration Statements on Form S-8 (Registration No. 333-122665 filed February 9, 2005 and Registration No. 333-141694 filed March 30, 2007) (the “Prior Registration Statements”) relating to the MediciNova, Inc. Amended and Restated 2004 Stock Incentive Plan (the “2004 Plan”). On June 6, 2008, the Registrant’s stockholders approved an amendment to the 2004 Plan to increase the authorized number of shares of common stock of the Registrant (“Common Stock”) reserved for issuance pursuant to the 2004 Plan by 1,000,000 shares, or from 2,630,000 shares to 3,630,000 shares. Accordingly, this Registration Statement is being filed to register the additional 1,000,000 shares of Common Stock. Pursuant to General Instruction E to Form S-8, the contents of the Prior Registration Statements, including each of the documents filed with the Securities and Exchange Commission and incorporated (or deemed to be incorporated) by reference therein, and each of the documents filed as exhibits thereto, are incorporated by reference herein except as otherwise updated or modified by this filing. All exhibits required by General Instruction E to Form S-8 are filed as exhibits hereto.

## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 8. Exhibits.

<u>Exhibit Number</u>	<u>Description</u>
4.1(1)	Specimen of Common Stock Certificate.
4.2(2)	Rights Agreement between the Registrant and American Stock Transfer & Trust Company, which includes the form of Rights Certificate as <i>Exhibit B</i> and the Summary of Rights as <i>Exhibit C</i> , dated November 24, 2006.
5.1	Opinion of Pillsbury Winthrop Shaw Pittman LLP.
10.1(3)	MediciNova, Inc. 2004 Stock Incentive Plan.
10.2(4)	Amendment to the MediciNova, Inc. Amended and Restated 2004 Stock Incentive Plan.
23.1	Consent of Independent Registered Public Accounting Firm.
23.2	Consent of Pillsbury Winthrop Shaw Pittman LLP (included in Exhibit 5.1).
24.1	Powers of Attorney (included in signature page to Registration Statement).

- (1) Filed with the Registrant’s Annual Report on Form 10-K filed February 15, 2007 and incorporated herein by reference.
- (2) Filed with the Registrant’s Registration Statement on Form 8-A filed November 29, 2006 and incorporated herein by reference.
- (3) Filed with the Registrant’s Amendment No. 1 to Registration Statement on Form S-1 filed November 24, 2004 and incorporated herein by reference. The MediciNova, Inc. 2004 Stock Incentive Plan was amended and restated effective January 9, 2006, and subsequently amended March 30, 2007.
- (4) Filed with the Registrant’s Current Report on Form 8-K filed June 10, 2008 and incorporated herein by reference. The MediciNova, Inc. 2004 Stock Incentive Plan was amended and restated effective January 9, 2006, and subsequently amended March 30, 2007.

## SIGNATURES

Pursuant to the requirements of the Securities Act, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Diego, State of California on this 20<sup>th</sup> day of June, 2008.

MEDICINOVA, INC.

By: /s/ Yuichi Iwaki

Yuichi Iwaki, M.D., Ph.D.

President and Chief Executive Officer

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Yuichi Iwaki, M.D., Ph.D. and Shintaro Asako, CPA as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-8, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agents, or either of them, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Yuichi Iwaki</u> Yuichi Iwaki, M.D., Ph.D.	Director, President & Chief Executive Officer (Principal Executive Officer)	June 20, 2008
<u>/s/ Shintaro Asako</u> Shintaro Asako, CPA	Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	June 20, 2008
<u>/s/ Alan Dunton</u> Alan Dunton, M.D.	Director	June 20, 2008
<u>/s/ Jeff Himawan</u> Jeff Himawan, Ph.D.	Director	June 20, 2008
<u>/s/ Arlene Morris</u> Arlene Morris	Director	June 20, 2008
<u>/s/ Hideki Nagao</u> Hideki Nagao	Director	June 20, 2008
<u>/s/ John K. A. Prendergast</u> John K. A. Prendergast, Ph.D.	Director	June 20, 2008
<u>/s/ Daniel Vapnek</u> Daniel Vapnek, Ph.D.	Director	June 20, 2008

## EXHIBIT INDEX

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Pillsbury Winthrop Shaw Pittman LLP  
501 West Broadway, Suite 1100  
San Diego, California 92101

June 20, 2008

MediciNova, Inc.  
4350 La Jolla Village Drive, Suite 950  
San Diego, CA 92122

**Re: Registration Statement on Form S-8**

Ladies and Gentlemen:

We are acting as counsel for MediciNova, Inc., a Delaware corporation (the "**Company**"), in connection with the Registration Statement on Form S-8 (the "**Registration Statement**") relating to the registration under the Securities Act of 1933 (the "**Act**") of 1,000,000 shares of the Company's Common Stock, par value \$0.001 per share (the "**Shares**"), issuable pursuant to the Company's Amended and Restated 2004 Stock Incentive Plan (the "**Plan**").

We have reviewed and are familiar with such corporate proceedings and other matters as we have deemed necessary for this opinion. Based upon the foregoing, we are of the opinion that the Shares have been duly authorized and, when issued and sold in accordance with the Plan, will be legally issued, fully paid and nonassessable. This opinion is limited to matters governed by the General Corporation Law of the State of Delaware.

We hereby consent to the filing of this opinion with the Securities and Exchange Commission as Exhibit 5.1 to the Registration Statement, and further consent to the use of our name wherever appearing in the Registration Statement, including any Prospectuses constituting a part thereof, and any amendments thereto. In giving this consent, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder. This opinion may be incorporated by reference in any abbreviated registration statement filed pursuant to Item E under the General Instructions to Form S-8 under the Securities Act with respect to the Registration Statement.

Very truly yours,

/s/ Pillsbury Winthrop Shaw Pittman LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the MediciNova, Inc. Amended and Restated 2004 Stock Incentive Plan of our reports dated March 14, 2008, with respect to the consolidated financial statements of MediciNova, Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2007, and the effectiveness of internal control over financial reporting of MediciNova, Inc. filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

San Diego, California  
June 17, 2008