

# SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

## SCHEDULE 13D (RULE 13d-101)

### INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULE 13d-1(a) AND AMENDMENTS THERETO FILED PURSUANT TO RULE 13d-2(a)

(Amendment No. \_\_\_\_\_)\*

**Mirna Therapeutics, Inc.**  
(Name of Issuer)

Common Stock, \$0.001 par value  
(Title of Class of Securities)

60470J103  
(CUSIP Number)

Nathalie Auber  
Sofinnova Ventures, Inc.  
3000 Sand Hill Road, Bldg 4, Suite 250  
Menlo Park, CA 94025  
(650) 681-8420  
(Name, Address and Telephone Number of Person  
Authorized to Receive Notices and Communications)

#### COPY TO:

Linda Daley, Esq.  
c/o Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP  
1200 Seaport Blvd., Redwood City, CA 94063  
(650) 463-5243

October 5, 2015  
(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 240.13d-7 for other parties to whom copies are to be sent.

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

This information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)  Sofinnova Venture Partners VIII, L.P. ("SVP VIII")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  2,974,811 shares, except that Sofinnova Management VIII, L.L.C. ("SM VIII"), the general partner of SVP VIII, may be deemed to have sole voting power, and Dr. Michael F. Powell ("Powell"), Dr. James I. Healy ("Healy"), Dr. Anand Mehra ("Mehra"), and Dr. Srinivas Akkaraju ("Akkaraju") the managing members of SM VIII, may be deemed to have shared power to vote these shares.
	8	SHARED VOTING POWER  See response to row 7.
	9	SOLE DISPOSITIVE POWER  2,974,811 shares, except that SM VIII, the general partner of SVP VIII, may be deemed to have sole dispositive power and Powell, Healy, Mehra and Akkaraju, the managing members of SM VIII, may be deemed to have shared power to dispose of these shares.
	10	SHARED DISPOSITIVE POWER  See response to row 9.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,974,811	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW 11 EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11  14.17%	
14	TYPE OF REPORTING PERSON  PN	

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)  Sofinnova Management VIII, L.L.C. ("SM VIII")		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS  AF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole voting power, and Powell, Healy, Mehra and Akkaraju, the managing members of SM VIII, may be deemed to have shared power to vote these shares.	
	8	SHARED VOTING POWER  See response to row 7.	
	9	SOLE DISPOSITIVE POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole dispositive power, and Powell, Healy, Mehra and Akkaraju, the managing members of SM VIII, may be deemed to have shared dispositive power over these shares.	
	10	SHARED DISPOSITIVE POWER  See response to row 9.	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,974,811		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW 11 EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11  14.17%		
14	TYPE OF REPORTING PERSON  OO		

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)  Dr. Srinivas Akkaraju ("Akkaraju")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  -0-
	8	SHARED VOTING POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole voting power, and Akkaraju, a managing member of SM VIII, may be deemed to have shared voting power to vote these shares.
	9	SOLE DISPOSITIVE POWER  -0-
	10	SHARED DISPOSITIVE POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole dispositive power, and Akkaraju, a managing member of SM VIII, may be deemed to have shared power to dispose of these shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,974,811	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW 11 EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11  14.17%	
14	TYPE OF REPORTING PERSON  IN	

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)  Dr. Michael F. Powell ("Powell")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  -0-
	8	SHARED VOTING POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole voting power, and Powell, a managing member of SM VIII, may be deemed to have shared voting power to vote these shares.
	9	SOLE DISPOSITIVE POWER  1,999 shares that are subject to stock option exercisable by Powell within 60 days of the date of this filing.
	10	SHARED DISPOSITIVE POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole dispositive power, and Powell, a managing member of SM VIII, may be deemed to have shared power to dispose of these shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,976,810	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW 11 EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11  14.18%	
14	TYPE OF REPORTING PERSON  IN	

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)  Dr. James I. Healy ("Healy")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  -0-
	8	SHARED VOTING POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole voting power, and Healy, a managing member of SM VIII, may be deemed to have shared voting power to vote these shares.
	9	SOLE DISPOSITIVE POWER  -0-
	10	SHARED DISPOSITIVE POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole dispositive power, and Healy, a managing member of SM VIII, may be deemed to have shared power to dispose of these shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,974,811	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW 11 EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11  14.17%	
14	TYPE OF REPORTING PERSON  IN	

1	NAME OF REPORTING PERSON I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)  Dr. Anand Mehra ("Mehra")	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS  AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION  U.S. Citizen	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER  -0-
	8	SHARED VOTING POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole voting power, and Mehra, a managing member of SM VIII and director of the Issuer, may be deemed to have shared voting power to vote these shares.
	9	SOLE DISPOSITIVE POWER  -0-
	10	SHARED DISPOSITIVE POWER  2,974,811 shares, all of which are owned directly by SVP VIII. SM VIII, the general partner of SVP VIII, may be deemed to have sole dispositive power, and Mehra, a managing member of SM VIII and director of the Issuer, may be deemed to have shared power to dispose of these shares.
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  2,974,811	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW 11 EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 11  14.17%	
14	TYPE OF REPORTING PERSON  IN	

**Statement on Schedule 13D**

This Statement on Schedule 13D relates to the beneficial ownership of Common Stock, \$0.001 par value per share (“Common Stock”), of Mirna Therapeutics, Inc., a Delaware corporation (“Issuer”). This Schedule 13D is being filed by Sofinnova Venture Partners VIII, L.P., a Delaware limited partnership (“SVP VIII”), Sofinnova Management VIII, L.L.C., a Delaware limited liability company (“SM VIII”), Dr. Srinivas Akkaraju (“Akkaraju”), Dr. Michael F. Powell (“Powell”), Dr. James I. Healy (“Healy”), and Dr. Anand Mehra (“Mehra” and collectively with SVP VIII, SM VIII, Akkaraju, Powell, and Healy, the “Reporting Persons”).

**ITEM 1. SECURITY AND ISSUER.**

- (a) The class of equity securities to which this statement relates is the Common Stock of the Issuer.
- (b) The Issuer’s principal executive offices are located at 2150 Woodward Street, Suite 100, Austin, TX 78744.

**ITEM 2. IDENTITY AND BACKGROUND.**

(a) The persons and entities filing this Schedule 13D are SVP VIII, SM VIII, Akkaraju, Powell, Healy, and Mehra. SM VIII, the general partner of SVP VIII, may be deemed to have sole power to vote and sole power to dispose of shares of the Issuer directly owned by SVP VIII.

(b) The address of the principal place of business for each of the Reporting Persons is c/o Sofinnova Ventures, 3000 Sand Hill Road, Bldg 4, Suite 250, Menlo Park, California 94025.

(c) The principal occupation of each of the Reporting Persons is the venture capital investment business. The principal business of SVP VIII is to make investments in private and public companies, and the principal business of SM VIII is to serve as the general partner of SVP VIII. Akkaraju, Powell, Healy and Mehra are the managing members of SM VIII. Powell is a director of the Issuer.

(d) During the last five years, none of the Reporting Persons has been convicted in any criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) During the last five years, none of the Reporting Persons has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) SVP VIII is a Delaware limited partnership. SM VIII is a Delaware limited liability company. Akkaraju, Powell, Healy, and Mehra are U.S. citizens.

**ITEM 3. SOURCE AND AMOUNT OF FUNDS OR OTHER CONSIDERATION.**

On October 22, 2012, SVP VIII entered into a Series C investment agreement pursuant to which SVP VIII acquired from the Issuer an aggregate 1,244,269 shares of Series C preferred shares for a purchase price of approximately \$7.64 share, or \$9,499,999.41 in the aggregate. The Series C preferred shares accrued stock dividends payable in additional Series C preferred shares at a rate of 8% per annum accruing from the date of issuance. The aggregate amount of stock dividends that accrued through the closing of the Issuer’s initial public offering of Common Stock (“Offering”) from the Series C preferred shares held by SVP VIII was 258,191 shares of Common Stock.

On March 31, 2015, SVP VIII entered into a Series D investment agreement pursuant to which SVP VIII acquired from the Issuer an aggregate 583,559 shares of Series D preferred shares for a purchase price of approximately \$9.17 per share, or \$5,348,323.12 in the aggregate. The Series D preferred shares accrued stock dividends payable in additional Series D preferred shares at a rate of 8% per annum accruing from the date of issuance. The aggregate amount of stock dividends that accrued through the closing of the Issuer’s initial public offering of Common Stock (“Offering”) from the Series D preferred shares held by SVP VIII was 31,650 shares of Common Stock

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On June 4, 2015, Powell was granted a stock option from the Issuer to purchase 6,666 shares of Common Stock at an exercise price of \$6.45 per share. Such option will expire on June 4, 2025. The option vests with respect to 20% of the shares subject thereto on May 1, 2015, with the remaining shares vesting with respect to 1/8 of the remaining shares subject thereto on each six month anniversary thereafter, subject to Powell continuing to provide services to the Issuer through each such vesting date.

On September 30, 2015, Powell was granted a stock option from the Issuer to purchase 7,200 shares of Common Stock at an exercise price of \$7.00 per share. Such option will expire on September 30, 2025. The option vests with respect to 33.3% of the shares subject thereto on each yearly anniversary of September 30, 2015, subject to Powell continuing to provide services to the Issuer through each vesting date.

In connection with the Offering, the Series C and Series D preferred shares automatically converted on a one-for-one basis into 1,244,269 shares of Common Stock and 583,559 shares of Common Stock respectively. The accrued stock dividends associated with the Series C and Series D preferred shares converted on one-for-one basis into 289.841 shares of Common Stock.

In connection with the Offering, SVP VIII purchased 857,142 shares of Common Stock at \$7 per share, or \$5,999,994 in the aggregate. Such purchase occurred pursuant to and on the terms set forth in the Issuer's Prospectus filed pursuant to Rule 424(b)(4) on October 1, 2015 with the Securities and Exchange Commission (the "Prospectus").

The Issuer effected a 1-for-15 reverse stock split immediately prior to the completion of the Offering. Accordingly, unless otherwise noted above, all disclosed numbers and nominal value of shares are adjusted for such stock split.

The source of the funds for all purchases and acquisitions by the Reporting Persons was from working capital.

No part of the purchase price was borrowed by any Reporting Person for the purpose of acquiring any securities discussed in this Item 3.

#### **ITEM 4. PURPOSE OF TRANSACTION.**

The Reporting Persons hold their securities of the Issuer for investment purposes. Depending on the factors discussed herein, the Reporting Persons may, from time to time, acquire additional Common Stock and/or retain and/or sell all or a portion of the Common Stock held by the Reporting Persons in the open market or in privately negotiated transactions, and/or may distribute the Common Stock held by the Reporting Persons to their respective members or limited partners. Any actions the Reporting Persons might undertake will be dependent upon the Reporting Persons' review of numerous factors, including, among other things, the price levels of the Common Stock, general market and economic conditions, ongoing evaluation of the Issuer's business, financial condition, operations and prospects; the relative attractiveness of alternative business and investment opportunities, and other future developments. Except as set forth above, the Reporting Persons have no present plans or intentions which would result in or relate to any of the transactions described in subparagraphs (a) through (j) of Item 4 of Schedule 13D.

#### **ITEM 5. INTEREST IN SECURITIES OF THE ISSUER.**

(a,b) Regarding aggregate beneficial ownership, see Row 11 of the cover page of each Reporting Person. Regarding percentage beneficial ownership, see Row 13 of the cover page of each Reporting Person. Regarding sole power to vote shares, see Row 7 of the cover page of each Reporting Person. Regarding shared power to vote shares, see Row 8 of the cover page of each Reporting Person. Regarding sole power to dispose of shares, see Row 9 of the cover page of each Reporting Person. Regarding shared power to dispose of shares, see Row 10 of the cover page of each Reporting Person. Percentage calculations were made using 20,994,226 as the number of shares of Common Stock outstanding on October 6, 2015 as provided to Reporting Persons by the Issuer.

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(c) Except as set forth in Item 3 above, the Reporting Persons have not effected any transaction in the Common Stock of the Issuer during the past 60 days.

(d) Under certain circumstances set forth in the limited partnership agreement of SVP VIII, the general partner and limited partners of SVP VIII may be deemed to have the right to receive dividends from, or the proceeds from, the sale of shares of the Issuer owned by such entity of which they are a partner.

(e) Not applicable.

#### **ITEM 6. CONTRACTS, ARRANGEMENTS, UNDERSTANDINGS OR RELATIONSHIPS WITH RESPECT TO SECURITIES OF THE ISSUER.**

Pursuant to a lock-up agreement filed as Exhibit A to the Underwriting Agreement entered into with Citigroup Global Markets Inc. and Leerink Partners LLC as Representatives of the several underwriters in connection with the Offering, the Reporting Persons are subject to a lock-up period continuing and including the date 180 days after the date of the Prospectus, during which the Reporting Persons have agreed, subject to limited exceptions, not to offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock or enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of Common Stock without the consent of the underwriters. The lock-up is more fully described in Exhibit A to the Underwriting Agreement filed as Exhibit 1.1 in Amendment No. 2 to the Issuer's Registration Statement on Form S-1 (as amended from time to time) (File No. 333-206544), and is incorporated herein by reference.

The Reporting Persons are party to a Third Amended and Restated Investor Rights Agreement among the Issuer, the Reporting Persons and other shareholders. Subject to the terms of the Third Amended and Restated Investors' Rights Agreement, holders of Common Stock having registration rights can demand that the Issuer file a registration statement or request that their shares be covered by a registration statement that the Issuer is otherwise filing. The Investors' Rights Agreement dated as of March 31, 2015 is filed as Exhibit 4.3 to the Issuer's Registration Statement on Form S-1 (File No. 333-206544), and is incorporated herein by reference.

On June 4, 2015, Powell was granted a stock option from the Issuer to purchase 6,666 shares of Common Stock at an exercise price of \$6.45 per share. Such option will expire on June 4, 2025. The option vests with respect to 20% of the shares subject thereto on May 1, 2015, with the remaining shares vesting with respect to 1/8 of the remaining shares subject thereto on each six month anniversary thereafter, subject to Powell continuing to provide services to the Issuer through each such vesting date.

On September 30, 2015, Powell was granted a stock option from the Issuer to purchase 7,200 shares of Common Stock at an exercise price of \$7.00 per share. Such option will expire on September 30, 2025. The option vests with respect to 33.3% of the shares subject thereto on each yearly anniversary of September 30, 2015, subject to Powell continuing to provide services to the Issuer through each vesting date.

Powell, in his capacity as a director of the Issuer, along with the other directors of the Issuer, entered into an Indemnification Agreement with the Issuer, as more fully described in the Prospectus and incorporated herein by reference to Exhibit 10.13 to the Issuer's Registration Statement on Form S-1 (File No. 333-206544).

#### **ITEM 7. MATERIAL TO BE FILED AS EXHIBITS.**

EXHIBIT A Agreement of Joint Filing.

EXHIBIT B Power of Attorney

EXHIBIT C Form of Lock-Up Agreement entered into by and among the Issuer, the underwriters and certain others, and is incorporated herein by reference to Exhibit A to the Underwriting Agreement filed as Exhibit 1.1 in Amendment No. 2 to the Issuer's Registration Statement on Form S-1 (File No. 333-206544).

EXHIBIT D Form of Indemnification Agreement for Directors and Officers, filed as Exhibit 10.13 to the Issuer's Registration Statement on Form S-1 (File No. 333-206544) is incorporated herein by reference.

EXHIBIT E Third Amended and Restated Investors' Rights Agreement dated as of March 31, 2015, was filed as Exhibit 4.3 to the Issuer's Registration Statement on Form S-1 (File No. 333-206544) is incorporated herein by reference.

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SIGNATURES

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: October 7, 2015

SOFINNOVA VENTURE PARTNERS VIII, L.P.,  
a Delaware Limited Partnership

By: SOFINNOVA MANAGEMENT VIII, L.L.C.,  
a Delaware Limited Liability Company  
Its: General Partner

By: /s/ Nathalie Auber  
Nathalie Auber  
Attorney-in-Fact

SOFINNOVA MANAGEMENT VIII, L.L.C.,  
a Delaware Limited Liability Company

By: /s/ Nathalie Auber  
Nathalie Auber  
Attorney-in-Fact

DR. SRINIVAS AKKARAJU  
DR. JAMES I. HEALY  
DR. MICHAEL F. POWELL  
DR. ANAND MEHRA

By: /s/ Nathalie Auber  
Nathalie Auber  
Attorney-in-Fact

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EXHIBIT INDEX

<u>Exhibit</u>	<u>Description</u>
A	Agreement of Joint Filing.
B	Power of Attorney.
C	Form of Lock-Up Agreement incorporated herein by reference to Exhibit A to the Underwriting Agreement filed as Exhibit 1.1 in Amendment No. 2 to the Issuer's Registration Statement on Form S-1 (File No. 333-206544).
D	Form of Indemnification Agreement for Directors and Officers, filed as Exhibit 10.13 to the Issuer's Registration Statement on Form S-1 (File No. 333-206544) is incorporated herein by reference.  Third Amended and Restated Investors' Rights Agreement dated as of March 31, 2015, was filed as Exhibit 4.3 to the Issuer's Registration Statement on Form S-1 (File No. 333-206544) is incorporated herein by reference.

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EXHIBIT A

Agreement of Joint Filing

The undersigned hereby agree that a single Schedule 13D (or any amendment thereto) relating to the Common Stock of Mirna Therapeutics, Inc. shall be filed on behalf of each of the undersigned and that this Agreement shall be filed as an exhibit to such Schedule 13D.

Date: October 7, 2015

SOFINNOVA VENTURE PARTNERS VIII, L.P.,  
a Delaware Limited Partnership

By: SOFINNOVA MANAGEMENT VIII, L.L.C.,  
a Delaware Limited Liability Company  
Its: General Partner

By: /s/ Nathalie Auber  
Nathalie Auber  
Attorney-in-Fact

SOFINNOVA MANAGEMENT VIII,  
a Delaware Limited Liability Company

By: /s/ Nathalie Auber  
Nathalie Auber  
Attorney-in-Fact

DR. SRINIVAS AKKARAJU  
DR. JAMES I. HEALY  
DR. MICHAEL F. POWELL  
DR. ANAND MEHRA

By: /s/ Nathalie Auber  
Nathalie Auber  
Attorney-in-Fact

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EXHIBIT B

Power of Attorney.

Nathalie Auber has signed this Schedule 13D as Attorney-In-Fact. Note that copies of the applicable Power of Attorney are already on file with the appropriate agencies.

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