UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

MERSANA THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)

840 Memorial Drive, Cambridge, MA (Address of Principal Executive Offices)

> Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as amended Mersana Therapeutics, Inc. 2017 Stock Incentive Plan Mersana Therapeutics, Inc. 2017 Employee Stock Purchase Plan (Full titles of the plans)

> > **Anna Protopapas** President and Chief Executive Officer 840 Memorial Drive Cambridge, MA 02139 (Name and address of agent for service) (617) 498-0020

(Telephone number, including area code, of agent for service)

Please send copies of all communications to: Marc A. Rubenstein Ropes & Gray LLP Prudential Tower 800 Boylston Street Boston, MA 02199-3600 617-951-7826c

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

Large accelerated filer o

Non-accelerated filer x

(Do not check if a smaller reporting company)

Accelerated filer o Smaller reporting company o Emerging growth companyx

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. x

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as				
amended - Common Stock, \$0.0001 par value per share	3,141,625 shares(2)	\$ 2.89(3)	\$ 9,079,297	\$ 1,053
Mersana Therapeutics, Inc. 2017 Stock Incentive Plan -				
Common Stock, \$0.0001 par value per share	2,255,000 shares(4)	\$ 14.04(5)	\$ 31,660,200	\$ 3,670
Mersana Therapeutics, Inc. 2017 Employee Stock Purchase				
Plan - Common Stock, \$0.0001 par value per share	225,000 shares(6)	\$ 14.04(7)	\$ 3,159,000	\$ 367
TOTAL	5,621,625 shares		\$ 43,898,497	\$ 5,090

Pursuant to Rule 416(a) under the Securities Act of 1933, this Registration Statement also covers such additional shares of Common Stock as may issued to prevent dilution from stock splits. stock dividends and similar transactions.

Represents shares of Common Stock issuable upon exercise of options previously granted under the Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as amended, that are outstanding as of the date of this Registration Statement. To the extent that shares of Common Stock issuable upon the exercise of such options expire or are terminated, surrendered or cancelled without the delivery of shares of Common Stock, are forfeited to or repurchased by the registrant, or otherwise become available again for grant, in each case, on or after the date of this Registration Statement, such shares of Common Stock will be available for issuance under the Mersana Therapeutics, Inc. 2017 Stock Incentive Plan. Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457 of the Securities Act of 1933. For the shares of Common Stock reserved for issuance upon the exercise

(3)of outstanding awards granted under the Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as amended, the Proposed Maximum Offering Price Per Share is \$2.89 per share, which is the weighted average exercise price (rounded to the nearest cent) of the outstanding awards under the Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as amended. Represents shares of Common Stock reserved for issuance upon exercise of options or in respect of other awards as of the date of this Registration Statement under the Mersana

(4)

Therapeutics, Inc. 2017 Stock Incentive Plan.

Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(h) based on the average high and low prices of the registrant's Common Stock as reported by the NASDAQ Global Market on July 14, 2017 to be \$14.25 and \$13.82, respectively.

Represents shares of Common Stock issuable upon exercise of options that have not yet been granted as of the date of this Registration Statement under the Mersana Therapeutics, Inc. 2017 Employee Stock Purchase Plan. Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(h) based on the average high and low prices of the registrant's Common Stock as reported by the

(7)NASDAQ Global Market on July 14, 2017 to be \$14.25 and \$13.82, respectively.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

As permitted by Rule 428 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement omits the information specified in Part I of Form S-8. The documents containing the information specified in Part I will be delivered to the participants of the Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as amended, Mersana Therapeutics, Inc. 2017 Stock Incentive Plan, and Mersana Therapeutics, Inc. 2017 Employee Stock

04-3562403 (I.R.S. Employer Identification No.) 02139

(Zip Code)

Purchase Plan, as required by Rule 428(b). Such documents are not being filed with the Securities and Exchange Commission (the "SEC") as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

We incorporate by reference herein the following documents filed by Mersana Therapeutics, Inc. (the "Registrant") with the SEC:

- (a) the Registrant's prospectus filed with the SEC on June 29, 2017 pursuant to Rule 424(b) under the Securities Act relating to the registration statement on Form S-1 (File No. 333-218412), that contains audited financial statements of the Registrant for the latest fiscal period for which such statements have been filed; and
- (b) the description of the Registrant's Common Stock, \$0.0001 par value per share, which is contained in the Registrant's registration statement on Form 8-A filed by the Registrant with the SEC under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), on June 23, 2017, including any amendments or reports filed for the purpose of updating such description.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a posteffective amendment to this Registration Statement that indicates that all securities offered have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated herein by reference from the date of filing of such documents. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any subsequently filed document which also is incorporated or is deemed to be incorporated by reference herein modifies or supersedes such earlier statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute part of this Registration Statement.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

The Registrant's amended and restated certificate of incorporation contains a provision that eliminates, to the maximum extent permitted by the General Corporation Law of the State of Delaware, the personal liability of directors for monetary damages for breach of their fiduciary duties as a director. The Registrant's amended and restated bylaws provide that the Registrant shall indemnify its directors and executive officers to the fullest extent permitted by the General Corporation Law of the State of Delaware.

Sections 145 and 102(b)(7) of the General Corporation Law of the State of Delaware provide that a corporation may indemnify any person made a party to an action by reason of the fact that he or she was a director, executive officer, employee or agent of the corporation or is or was serving at the request of the corporation against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him or her in connection with such action if he or she acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of an action by or in right of the corporation, no indemnification may generally be made in respect of any claim as to which such person is adjudged to be liable to the corporation.

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The Registrant has entered into indemnification agreements with each of its directors and executive officers, in addition to the indemnification provided for the Registrant's amended and restated bylaws, and intends to enter into indemnification agreements with any new directors and executive officers in the future.

The Registrant maintains insurance on behalf of any person who is or was a director or officer of the Registrant against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

Exhibit

4.1	Fifth Amended and Restated Certificate of Incorporation (previously filed as Exhibit 3.1 to the current report Form 8-K filed on July 10,
	2017 (File No. 001-38129) and incorporated herein by reference).

- 4.2 Amended and Restated Bylaws of the Registrant (previously filed as Exhibit 3.2 to the current report Form 8-K filed on July 10, 2017 (File No. 001-38129) and incorporated herein by reference).
- 4.3 Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as amended (previously filed as Exhibit 10.19 to the registration statement on

Form S-1 on June 1, 2017 (File No. 333-218412) and incorporated herein by reference).

- 4.4 Mersana Therapeutics, Inc. 2017 Stock Incentive Plan (previously filed as Exhibit 10.22 to the registration statement on Form S-1 (File No. 333-218412) and incorporated herein by reference).
- 4.5 Mersana Therapeutics, Inc. 2017 Employee Stock Purchase Plan (previously filed as Exhibit 10.23 to the registration statement on Form S-1 (File No. 333-218412) and incorporated herein by reference).
- 5.1 Opinion of Ropes & Gray LLP .
- 23.1 Consent of Ernst & Young LLP.
- 23.2 Consent of Ropes & Gray LLP (included in the opinion filed as Exhibit 5.1).

24.1 Powers of Attorney (included on the signature page in Part II).

Item 9. Undertakings.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

- (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of a prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement;

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(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) above shall not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement.

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, 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 Cambridge, Commonwealth of Massachusetts, on this 21st day of July, 2017.

MERSANA THERAPEUTICS, INC.

By: /s/ Anna Protopapas

Name: Anna Protopapas Title: President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Anna Protopapas and Eva M. Jack, and each of them acting individually, his or her true and lawful attorney-in-fact and agent 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 to be filed by Mersana Therapeutics, Inc., 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 full power and authority to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitutes, may lawfully do or cause to be done by virtue hereof.

* * * *

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date		
/s/ Anna Protopapas Anna Protopapas	President, Chief Executive Officer and Director (Principal Executive Officer)	July 21 , 2017		
/s/ Eva M. Jack Eva M. Jack	Chief Business Officer (Principal Financial Officer)	July 21, 2017		
/s/ Wayne Foster Wayne Foster	Vice President of Finance (Principal Accounting Officer)	July 21, 2017		
/s/ David Mott David Mott	Chairman of the Board	July 21 , 2017		
/s/ Elaine V. Jones, Ph.D. Elaine V. Jones, Ph.D.	Director	July 21 , 2017		
/s/ Sara Nayeem, M.D. Sara Nayeem, M.D.	Director	July 21 , 2017		
/s/ Kristen Hege, M.D. Kristen Hege, M.D.	Director	July 21 , 2017		
/s/ Andrew A. F. Hack, M.D., Ph.D. Andrew A.F. Hack, M.D., Ph.D.	Director	July 21 , 2017		
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ROPES & GRAY LLP PRUDENTIAL TOWER 800 BOYLSTON STREET BOSTON, MA 02199-3600 WWW.ROPESGRAY.COM

July 21, 2017

Mersana Therapeutics, Inc. 840 Memorial Drive Cambridge, MA 02139

Re: <u>Registration Statement on Form S-8</u>

Ladies and Gentlemen:

This opinion is furnished to you in connection with the registration statement on Form S-8 (the "<u>Registration Statement</u>"), filed with the Securities and Exchange Commission (the "<u>Commission</u>") under the Securities Act of 1933, as amended (the "<u>Securities Act</u>"), for the registration of an aggregate of 5,621,625 shares of common stock, \$0.0001 par value (the "<u>Shares</u>"), of Mersana Therapeutics, Inc., a Delaware corporation (the "<u>Company</u>"), issuable under the Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as amended, Mersana Therapeutics, Inc. 2017 Stock Incentive Plan and Mersana Therapeutics, Inc. 2017 Employee Stock Purchase Plan (each, a "<u>Plan</u>," and collectively, the "<u>Plans</u>").

We are familiar with the actions taken by the Company in connection with the adoption of the Plans. For purposes of our opinion, we have examined and relied upon such documents, records, certificates and other instruments as we have deemed necessary.

The opinions expressed below are limited to the Delaware General Corporation Law.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and, when the Shares have been issued and sold in accordance with the applicable Plan, the Shares will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. In giving this consent we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Ropes & Gray LLP

Ropes & Gray 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 Mersana Therapeutics, Inc. 2007 Stock Incentive Plan, as amended, the Mersana Therapeutics, Inc. 2017 Stock Incentive Plan and the Mersana Therapeutics, Inc. 2017 Employee Stock Purchase Plan of our report dated March 17, 2017 (except Note 14, as to which the date is June 15, 2017), with respect to the consolidated financial statements of Mersana Therapeutics, Inc. included in its Registration Statement (Form S-1 No. 333-218412) and related prospectus, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts July 20, 2017