

SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549

**SCHEDULE 13G**

UNDER THE SECURITIES EXCHANGE ACT OF 1934  
(Amendment No. \_\_\_\_\_)\*

**Mersana Therapeutics, Inc.**

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(Name of Issuer)

**Common Stock, \$0.0001 par value per share**

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(Title of Class of Securities)

**59045L106**

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(CUSIP Number)

**December 31, 2017**

(Date of Event Which Requires Filing of This Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
- Rule 13d-1(c)
- Rule 13d-1(d)**

\* 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 the disclosures provided in a prior cover page.

The information required in 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*).

|     |  |
|-----|--|
| 1.  | Names of Reporting Persons<br><b>Rho Ventures V, L.P.</b>  |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |
|     | (a) <input type="checkbox"/>   |
|     | (b) <input checked="" type="checkbox"/> (1)  |
| 3.  | SEC USE ONLY   |
| 4.  | Citizenship or Place of Organization<br><b>Delaware</b>  |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |
| 5.  | Sole Voting Power<br><b>0 shares</b>   |
| 6.  | Shared Voting Power<br><b>818,033 shares of Common Stock (2)</b>   |
| 7.  | Sole Dispositive Power<br><b>0 shares</b>  |
| 8.  | Shared Dispositive Power<br><b>818,033 shares of Common Stock (2)</b>  |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>818,033 shares of Common Stock (2)</b>    |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>3.6% (3)</b>   |
| 12. | Type of Reporting Person (see instructions)<br><b>PN</b>   |

- (1) This statement on Schedule 13G is filed by Rho Ventures V, L.P. ("RV V"), Rho Ventures V Affiliates, L.L.C. ("RV V Affiliates"), Rho Capital Partners LLC ("RCP"), RMV V, L.L.C. ("RMV V"), Pinnacle Investment Partners "Q-6", L.P. ("Q6"), Pinnacle Management Partners LLC ("PMP"), RUGU Partners LLC ("Rugu"), Kariba LLC ("Kariba"), Joshua Ruch ("Ruch"), Habib Kairouz ("Kairouz") and Mark Leschly ("Leschly," together with RV V, RV V Affiliates, RCP LLC, RMV V, PMP, Rugu, Kariba, Ruch and Kairouz, collectively, the "Reporting Persons"). The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.
- (2) Includes (i) 736,488 shares and warrants to purchase 15,522 shares held by RV V and (ii) 64,661 shares and warrants to purchase 1,362 shares held by RV V Affiliates. RMV V is the general partner of RV V and the managing member of RV V Affiliates and RCP is the managing member of RMV V. As such, RMV V and RCP possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. RMV V and RCP hold no shares of the Issuer directly. Ruch, Kairouz and Leschly are managing members of RCP and as such possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates.
- (3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

|     |  |
|-----|--|
| 1.  | Names of Reporting Persons<br><b>Rho Ventures V Affiliates, L.L.C.</b>                                       |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |
|     | (a) <input type="checkbox"/>   |
|     | (b) <input checked="" type="checkbox"/> (1)  |
| 3.  | SEC USE ONLY   |
| 4.  | Citizenship or Place of Organization<br><b>Delaware</b>  |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |
|     | 5. Sole Voting Power<br><b>0 shares</b>  |
|     | 6. Shared Voting Power<br><b>818,033 shares of Common Stock (2)</b>  |
|     | 7. Sole Dispositive Power<br><b>0 shares</b>   |
|     | 8. Shared Dispositive Power<br><b>818,033 shares of Common Stock (2)</b>                                     |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>818,033 shares of Common Stock (2)</b>    |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>3.6% (3)</b>   |
| 12. | Type of Reporting Person (see instructions)<br><b>OO</b>   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) Includes (i) 736,488 shares and warrants to purchase 15,522 shares held by RV V and (ii) 64,661 shares and warrants to purchase 1,362 shares held by RV V Affiliates. RMV V is the general partner of RV V and the managing member of RV V Affiliates and RCP is the managing member of RMV V. As such, RMV V and RCP possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. RMV V and RCP hold no shares of the Issuer directly. Ruch, Kairouz and Leschly are managing members of RCP and as such possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

|     |  |
|-----|--|
| 1.  | Names of Reporting Persons<br><b>Rho Capital Partners LLC</b>  |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |
|     | (a) <input type="checkbox"/>   |
|     | (b) <input checked="" type="checkbox"/> (1)  |
| 3.  | SEC USE ONLY   |
| 4.  | Citizenship or Place of Organization<br><b>Delaware</b>  |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |
|     | 5. Sole Voting Power<br><b>0 shares</b>  |
|     | 6. Shared Voting Power<br><b>818,033 shares of Common Stock (2)</b>  |
|     | 7. Sole Dispositive Power<br><b>0 shares</b>   |
|     | 8. Shared Dispositive Power<br><b>818,033 shares of Common Stock (2)</b>                                     |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>818,033 shares of Common Stock (2)</b>    |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>3.6% (3)</b>   |
| 12. | Type of Reporting Person (see instructions)<br><b>OO</b>   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) Includes (i) 736,488 shares and warrants to purchase 15,522 shares held by RV V and (ii) 64,661 shares and warrants to purchase 1,362 shares held by RV V Affiliates. RMV V is the general partner of RV V and the managing member of RV V Affiliates and RCP is the managing member of RMV V. As such, RMV V and RCP possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. RMV V and RCP hold no shares of the Issuer directly. Ruch, Kairouz and Leschly are managing members of RCP and as such possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

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|--|--|
| 1.   | Names of Reporting Persons<br><b>RMV V, L.L.C.</b>   |
| 2.   | Check the Appropriate Box if a Member of a Group (see instructions)  |
|  | (a) <input type="checkbox"/>   |
|  | (b) <input checked="" type="checkbox"/> (1)  |
| 3.   | SEC USE ONLY   |
| 4.   | Citizenship or Place of Organization<br><b>Delaware</b>  |
| Number of<br>Shares<br>Beneficially<br>Owned by<br>Each<br>Reporting<br>Person With: | 5. Sole Voting Power<br><b>0 shares</b>  |
|  | 6. Shared Voting Power<br><b>818,033 shares of Common Stock (2)</b>  |
|  | 7. Sole Dispositive Power<br><b>0 shares</b>   |
|  | 8. Shared Dispositive Power<br><b>818,033 shares of Common Stock (2)</b>                                     |
| 9.   | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>818,033 shares of Common Stock (2)</b>    |
| 10.  | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11.  | Percent of Class Represented by Amount in Row 9<br><b>3.6% (3)</b>   |
| 12.  | Type of Reporting Person (see instructions)<br><b>OO</b>   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) Includes (i) 736,488 shares and warrants to purchase 15,522 shares held by RV V and (ii) 64,661 shares and warrants to purchase 1,362 shares held by RV V Affiliates. RMV V is the general partner of RV V and the managing member of RV V Affiliates and RCP is the managing member of RMV V. As such, RMV V and RCP possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. RMV V and RCP hold no shares of the Issuer directly. Ruch, Kairouz and Leschly are managing members of RCP and as such possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

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| 1.  | Names of Reporting Persons<br><b>Pinnacle Investment Partners "Q-6", L.P.</b>                                |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |
|     | (a) <input type="checkbox"/>   |
|     | (b) <input checked="" type="checkbox"/> (1)  |
| 3.  | SEC USE ONLY   |
| 4.  | Citizenship or Place of Organization<br><b>Delaware</b>  |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |
| 5.  | Sole Voting Power<br><b>0 shares</b>   |
| 6.  | Shared Voting Power<br><b>422,871 shares of Common Stock (2)</b>   |
| 7.  | Sole Dispositive Power<br><b>0 shares</b>  |
| 8.  | Shared Dispositive Power<br><b>422,871 shares of Common Stock (2)</b>  |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>422,871 shares of Common Stock (2)</b>    |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>1.9% (3)</b>   |
| 12. | Type of Reporting Person (see instructions)<br><b>PN</b>   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) 422,871 shares are held by Q6. PMP is the general partner of Q6 and Rugu is the managing member of PMP. As such, PMP and Rugu possess power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6. PMP and RUGU hold no shares of the Issuer directly. Ruch is the managing member of Rugu and as such possesses power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

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| 1.  | Names of Reporting Persons<br><b>Pinnacle Management Partners LLC</b>  |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |
|     | (a) <input type="checkbox"/>   |
|     | (b) <input checked="" type="checkbox"/> (1)  |
| 3.  | SEC USE ONLY   |
| 4.  | Citizenship or Place of Organization<br><b>Delaware</b>  |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |
|     | 5. Sole Voting Power<br><b>0 shares</b>  |
|     | 6. Shared Voting Power<br><b>422,871 shares of Common Stock (2)</b>  |
|     | 7. Sole Dispositive Power<br><b>0 shares</b>   |
|     | 8. Shared Dispositive Power<br><b>422,871 shares of Common Stock (2)</b>                                     |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>422,871 shares of Common Stock (2)</b>    |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>1.9% (3)</b>   |
| 12. | Type of Reporting Person (see instructions)<br><b>OO</b>   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) 422,871 shares are held by Q6. PMP is the general partner of Q6 and Rugu is the managing member of PMP. As such, PMP and Rugu possess power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6. PMP and RUGU hold no shares of the Issuer directly. Ruch is the managing member of Rugu and as such possesses power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

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| 1.  | Names of Reporting Persons<br><b>RUGU Partners LLC</b>   |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |
|     | (a) <input type="checkbox"/>   |
|     | (b) <input checked="" type="checkbox"/> (1)  |
| 3.  | SEC USE ONLY   |
| 4.  | Citizenship or Place of Organization<br><b>Delaware</b>  |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |
| 5.  | Sole Voting Power<br><b>0 shares</b>   |
| 6.  | Shared Voting Power<br><b>422,871 shares of Common Stock (2)</b>   |
| 7.  | Sole Dispositive Power<br><b>0 shares</b>  |
| 8.  | Shared Dispositive Power<br><b>422,871 shares of Common Stock (2)</b>  |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>422,871 shares of Common Stock (2)</b>    |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>1.9% (3)</b>   |
| 12. | Type of Reporting Person (see instructions)<br><b>OO</b>   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) 422,871 shares are held by Q6. PMP is the general partner of Q6 and Rugu is the managing member of PMP. As such, PMP and Rugu possess power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6. PMP and RUGU hold no shares of the Issuer directly. Ruch is the managing member of Rugu and as such possesses power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.



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| 1.  | Names of Reporting Persons<br><b>Kariba LLC</b>  |  |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |  |
|     | (a)  | <input type="checkbox"/>                           |
|     | (b)  | <input checked="" type="checkbox"/> (1)            |
| 3.  | SEC USE ONLY   |  |
| 4.  | Citizenship or Place of Organization<br><b>United States of America</b>                                      |  |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |  |
|     | 5.   | Sole Voting Power<br><b>90,283 shares (2)</b>      |
|     | 6.   | Shared Voting Power                                |
|     | 7.   | Sole Dispositive Power<br><b>90,283 shares (2)</b> |
|     | 8.   | Shared Dispositive Power                           |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>90,283 shares of Common Stock (2)</b>     |  |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |  |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>0% (3)</b>   |  |
| 12. | Type of Reporting Person (see instructions)<br><b>OO</b>   |  |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) Includes 90,283 shares held by Kariba. Ruch is the managing member of Kariba and as such possesses power to direct the voting and disposition of the shares owned by Kariba and may be deemed to have indirect beneficial ownership of the shares held by Kariba.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

|     |  |   |
|-----|--|---|
| 1.  | Names of Reporting Persons<br><b>Joshua Ruch</b>   |   |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |   |
|     | (a)  | <input type="checkbox"/>                    |
|     | (b)  | <input checked="" type="checkbox"/> (1)     |
| 3.  | SEC USE ONLY   |   |
| 4.  | Citizenship or Place of Organization<br><b>United States of America</b>  |   |
|     | Number of  | 5. Sole Voting Power                        |
|     | Shares   | <b>90,283 shares (2)</b>                    |
|     | Beneficially   | 6. Shared Voting Power                      |
|     | Owned by   | <b>1,240,904 shares of Common Stock (3)</b> |
|     | Each   | 7. Sole Dispositive Power                   |
|     | Reporting  | <b>90,283 shares (2)</b>                    |
|     | Person With:   | 8. Shared Dispositive Power                 |
|     |  | <b>1,240,904 shares of Common Stock (3)</b> |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>1,331,187 shares of Common Stock (2), (3)</b> |   |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions)                              | <input type="checkbox"/>                    |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>5.9% (4)</b>   |   |
| 12. | Type of Reporting Person (see instructions)<br><b>IN</b>   |   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) Includes 90,283 shares held by Kariba. Ruch is the managing member of Kariba and as such possesses power to direct the voting and disposition of the shares owned by Kariba and may be deemed to have indirect beneficial ownership of the shares held by Kariba.

(3) Includes (i) 736,488 shares and warrants to purchase 15,522 shares held by RV V, (ii) 64,661 shares and warrants to purchase 1,362 shares held by RV V Affiliates and (iii) 422,871 shares held by Q6. RMV V is the general partner of RV V and the managing member of RV V Affiliates and RCP is the managing member of RMV V. PMP is the general partner of Q6 and Rugu is the managing member of PMP. As such, (i) RMV V and RCP possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates and (ii) PMP and Rugu possess power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6. RMV V, RCP, PMP and Rugu hold no shares of the Issuer directly. Ruch, Kairouz and Leschly are managing members of RCP and as such possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. Ruch is the managing member of Rugu and as such possesses power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

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| 1.  | Names of Reporting Persons<br><b>Mark Leschly</b>  |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |
|     | (a) <input type="checkbox"/>   |
|     | (b) <input checked="" type="checkbox"/> (1)  |
| 3.  | SEC USE ONLY   |
| 4.  | Citizenship or Place of Organization<br><b>Kingdom of Denmark</b>  |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |
|     | 5. Sole Voting Power   |
|     | 6. Shared Voting Power<br><b>818,033 shares of Common Stock (2)</b>  |
|     | 7. Sole Dispositive Power  |
|     | 8. Shared Dispositive Power<br><b>818,033 shares of Common Stock (2)</b>                                     |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>818,033 shares of Common Stock (2)</b>    |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>3.6% (3)</b>   |
| 12. | Type of Reporting Person (see instructions)<br><b>IN</b>   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) Includes (i) 736,488 shares and warrants to purchase 15,522 shares held by RV V and (ii) 64,661 shares and warrants to purchase 1,362 shares held by RV V Affiliates. RMV V is the general partner of RV V and the managing member of RV V Affiliates and RCP is the managing member of RMV V. As such, RMV V and RCP possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. RMV V and RCP hold no shares of the Issuer directly. Ruch, Kairouz and Leschly are managing members of RCP and as such possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

|     |  |
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| 1.  | Names of Reporting Persons<br><b>Habib Kairouz</b>   |
| 2.  | Check the Appropriate Box if a Member of a Group (see instructions)  |
|     | (a) <input type="checkbox"/>   |
|     | (b) <input checked="" type="checkbox"/> (1)  |
| 3.  | SEC USE ONLY   |
| 4.  | Citizenship or Place of Organization<br><b>United States of America</b>                                      |
|     | Number of Shares Beneficially Owned by Each Reporting Person With:   |
|     | 5. Sole Voting Power   |
|     | 6. Shared Voting Power<br><b>818,033 shares of Common Stock (2)</b>  |
|     | 7. Sole Dispositive Power  |
|     | 8. Shared Dispositive Power<br><b>818,033 shares of Common Stock (2)</b>                                     |
| 9.  | Aggregate Amount Beneficially Owned by Each Reporting Person<br><b>818,033 shares of Common Stock (2)</b>    |
| 10. | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (see instructions) <input type="checkbox"/> |
| 11. | Percent of Class Represented by Amount in Row 9<br><b>3.6% (3)</b>   |
| 12. | Type of Reporting Person (see instructions)<br><b>IN</b>   |

(1) This statement on Schedule 13G is filed by the Reporting Persons. The Reporting Persons expressly disclaim status as a "group" for purposes of this Schedule 13G.

(2) Includes (i) 736,488 shares and warrants to purchase 15,522 shares held by RV V and (ii) 64,661 shares and warrants to purchase 1,362 shares held by RV V Affiliates. RMV V is the general partner of RV V and the managing member of RV V Affiliates and RCP is the managing member of RMV V. As such, RMV V and RCP possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. RMV V and RCP hold no shares of the Issuer directly. Ruch, Kairouz and Leschly are managing members of RCP and as such possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates.

(3) The percentages set forth on the cover sheets are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

**INTRODUCTORY NOTE**This statement on Schedule 13G is filed by the Reporting Persons in respect of shares of Common Stock, par value \$0.0001 per share (“Common Stock”), of Mersana Therapeutics, Inc. (the “Issuer”).

**Item 1(a). Name of Issuer:**

Mersana Therapeutics, Inc.

**Item 1(b). Address of Issuer’s Principal Executive Officers:**

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

**Item 2(a). Name of Person(s) Filing:**

Rho Ventures V, L.P. (“RV V”)  
Rho Ventures V Affiliates, L.L.C. (“RV V Affiliates”)  
Rho Capital Partners LLC (“RCP”)  
RMV V, L.L.C. (“RMV V”)  
Pinnacle Investment Partners “Q-6”, L.P. (“Q6”)  
Pinnacle Management Partners LLC (“PMP”)  
RUGU Partners LLC (“Rugu”)  
Kariba LLC (“Kariba”)  
Joshua Ruch (“Ruch”)  
Mark Leschly (“Leschly”)  
Habib Kairouz (“Kairouz”)

**Item 2(b). Address of Principal Business Office:**

For RV V, RV V Affiliates, RCP, RMV V, Ruch, Leschly and Kairouz:

c/o Rho Ventures, 152 W 57<sup>th</sup> Street, 23<sup>rd</sup> Floor, New York, New York 10019

For Q6, PMP, Rugu and Kariba:

c/o Pinnacle Management Services, LLC  
343 Thomall Street, Suite 600  
Edison, NJ 08837

**Item 2(c). Citizenship:**

|                 |                          |
|-----------------|--------------------------|
| RV V            | Delaware                 |
| RV V Affiliates | Delaware                 |
| RCP             | Delaware                 |
| RMV V           | Delaware                 |
| Kariba          | Delaware                 |
| Q6              | Delaware                 |
| PMP             | Delaware                 |
| Rugu            | Delaware                 |
| Ruch            | United States of America |
| Leschly         | Kingdom of Denmark       |
| Kairouz         | United States of America |

**Item 2(d). Title of Class of Securities:**

Common Stock, par value \$0.0001 per share.

**Item 2(e). CUSIP Number:**

59045L106

**Item 3. If This Statement is Filed Pursuant to Rule 13d-1(b), or 13d-2(b) or (c), Check Whether the Person Filing is a:**

Not applicable.

**Item 4(a). Amount Beneficially Owned:****Item 4(b). Percent of Class:****Item 4(c). Number of shares as to which such persons have:**

The following information with respect to the ownership of the Common Stock by the Reporting Persons filing this statement on Schedule 13G is provided as of December 31, 2017:

| Reporting Persons | Shares Held Directly (1) | Sole Voting Power (1) | Shared Voting Power (1) | Sole Dispositive Power (1) | Shared Dispositive Power (1) | Beneficial Ownership (1) | Percentage of Class (1, 5) |
|-------------------|--------------------------|-----------------------|-------------------------|----------------------------|------------------------------|--------------------------|----------------------------|
| RV V (2)          | 752,010                  | 0                     | 818,033                 | 0                          | 818,033                      | 818,033                  | 3.6%                       |
| RV Affiliates (2) | 66,023                   | 0                     | 818,033                 | 0                          | 818,033                      | 818,033                  | 3.6%                       |
| RMV V (2)         | 0                        | 0                     | 818,033                 | 0                          | 818,033                      | 818,033                  | 3.6%                       |
| RCP (2)           | 0                        | 0                     | 818,033                 | 0                          | 818,033                      | 818,033                  | 3.6%                       |
| Q6 (3)            | 422,871                  | 0                     | 422,871                 | 0                          | 422,871                      | 422,871                  | 1.9%                       |
| PMP (3)           | 0                        | 0                     | 422,871                 | 0                          | 422,871                      | 422,871                  | 1.9%                       |
| Rugu (3)          | 0                        | 0                     | 422,871                 | 0                          | 422,871                      | 422,871                  | 1.9%                       |
| Kariba (4)        | 90,283                   | 90,283                | 0                       | 90,283                     | 0                            | 90,283                   | 0%                         |
| Ruch (2)(3)(4)    | 0                        | 90,283                | 1,240,904               | 90,283                     | 1,240,904                    | 1,331,187                | 5.9%                       |
| Leschly (2)       | 0                        | 0                     | 818,033                 | 0                          | 818,033                      | 818,033                  | 3.6%                       |
| Kairouz (2)       | 0                        | 0                     | 818,033                 | 0                          | 818,033                      | 818,033                  | 3.6%                       |

(1) Represents the number of shares of Common Stock currently underlying all securities held by the Reporting Persons.

(2) Includes (i) 736,488 shares and warrants to purchase 15,522 shares held by RV V and (ii) 64,661 shares and warrants to purchase 1,362 shares held by RV V Affiliates. RMV V is the general partner of RV V and the managing member of RV V Affiliates and RCP is the managing member of RMV V. As such, RMV V and RCP possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. RMV V and RCP hold no shares of the Issuer directly. Ruch, Kairouz and Leschly are managing members of RCP and as such possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates.

(3) PMP is the general partner of Q6 and Rugu is the managing member of PMP. As such, PMP and Rugu possess power to direct the voting and disposition of the shares owned by Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6. PMP and Rugu hold no shares of the Issuer directly. Ruch is the managing member of Rugu and as such possesses power to direct the voting and disposition of the shares owned Q6 and may be deemed to have indirect beneficial ownership of the shares held by Q6.

(4) Includes 90,283 shares held by Kariba. Ruch is the managing member of Kariba and as such possesses power to direct the voting and disposition of the shares owned by Kariba and may be deemed to have indirect beneficial ownership of the shares held by Kariba.

(5) The percentages set forth above are calculated based on 22,753,404 shares of Common Stock reported to be outstanding as of November 8, 2017 as set forth in the Issuer's Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission ("SEC") on November 13, 2017.

**Item 5. Ownership of Five Percent or Less of a Class:**

If this statement is being filed to report the fact that as of the date hereof, the Reporting Persons have ceased to be the beneficial owner of more than five percent of the class of securities, check the following:

**Item 6. Ownership of More Than Five Percent on Behalf of Another Person:**

Not applicable.

**Item 7. Identification and Classification of the Subsidiary which Acquired the Security Being Reported on by the Parent Holding Company:**

Not applicable.

**Item 8. Identification and Classification of Members of the Group:**

Not applicable.

**Item 9. Notice of Dissolution of Group:**

Not applicable.

**Item 10. Certification:**

Not applicable.

**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.

Dated: February 8, 2018

RHO VENTURES V, L.P.  
BY: RMV V, L.L.C.  
ITS: GENERAL PARTNER

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

RHO VENTURES V AFFILIATES, L.L.C.  
BY: RMV V, L.L.C.  
ITS: MANAGING MEMBER

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

RHO CAPITAL PARTNERS LLC

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

RMV V, L.L.C.

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

PINNACLE INVESTMENT PARTNERS "Q-6", L.P.  
BY: PINNACLE MANAGEMENT PARTNERS, L.L.C.

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

PINNACLE MANAGEMENT PARTNERS, L.L.C.

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

RUGU PARTNERS LLC

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

KARIBA LLC

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

JOSHUA RUCH

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

HABIB KAIROUZ

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

MARK LESCHLY

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

**Exhibit(s):**

- Exhibit 1: Joint Filing Statement
- Exhibit 2: Power of Attorney



AGREEMENT

Pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, the undersigned hereby agree that only one statement containing the information required by Schedule 13G need be filed with respect to the ownership by each of the undersigned of the shares of Common Stock of Mersana Therapeutics, Inc.

Dated: February 7, 2018

RHO VENTURES V, L.P.  
BY: RMV V, L.L.C.  
ITS: GENERAL PARTNER

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

RHO VENTURES V AFFILIATES, L.L.C.  
BY: RMV V, L.L.C.  
ITS: MANAGING MEMBER

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

RHO CAPITAL PARTNERS LLC

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

RMV V, L.L.C.

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

PINNACLE INVESTMENT PARTNERS "Q-6", L.P.  
BY: PINNACLE MANAGEMENT PARTNERS, L.L.C.

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

PINNACLE MANAGEMENT PARTNERS, L.L.C.

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

RUGU LLC

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

KARIBA LLC

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

JOSHUA RUCH

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

HABIB KAIROUZ

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

MARK LESCHLY

/s/ Peter Kalkanis  
Peter Kalkanis, Authorized Signer

## POWER OF ATTORNEY

The undersigned hereby constitutes and appoints Peter Kalkanis, with full power of substitution, as the undersigned's true and lawful attorney-in-fact to:

(1) prepare, execute in the undersigned's name and on the undersigned's behalf, and submit to the U.S. Securities and Exchange Commission (the "SEC") a Form ID, including amendments thereto, and any other documents necessary or appropriate to obtain codes and passwords enabling the undersigned to make electronic filings with the SEC of reports required by Section 16(a) of the Securities Exchange Act of 1934 or any rule or regulation of the SEC;

(2) execute for and on behalf of the undersigned, in the undersigned's capacity as an officer and/or director of Mersana Therapeutics, Inc. (the "Company") and/or 5% or 10% holder of the Company's capital stock, Forms 3, 4, and 5 as well as any Section 13D or 13G filings and any amendments thereto in accordance with Sections 13 and 16(a) of the Securities Exchange Act of 1934 and the rules thereunder;

(3) do and perform any and all acts for and on behalf of the undersigned which may be necessary or desirable to complete and execute any such Form 3, 4, or 5, 13D or 13G, complete and execute any amendment or amendments thereto, and timely file such form with the SEC and any stock exchange or similar authority; and

(4) take any other action of any type whatsoever in connection with the foregoing which, in the opinion of such attorney-in-fact, may be of benefit to, in the best interest of, or legally required by, the undersigned, it being understood that the documents executed by such attorney-in-fact on behalf of the undersigned pursuant to this Power of Attorney shall be in such form and shall contain such terms and conditions as such attorney-in-fact may approve in such attorney-in-fact's discretion.

The undersigned hereby grants to each such attorney-in-fact full power and authority to do and perform any and every act and thing whatsoever requisite, necessary, or proper to be done in the exercise of any of the rights and powers herein granted, as fully to all intents and purposes as the undersigned might or could do if personally present, with full power of substitution or revocation, hereby ratifying and confirming all that such attorney-in-fact, or such attorney-in-fact's substitute or substitutes, shall lawfully do or cause to be done by virtue of this power of attorney and the rights and powers herein granted. The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, are not assuming, nor is the Company assuming, any of the undersigned's responsibilities to comply with Sections 13 or 16 of the Securities Exchange Act of 1934.

This Power of Attorney shall remain in full force and effect until the undersigned is no longer required to file Forms 3, 4, and 5, 13D or 13G with respect to the undersigned's holdings of and transactions in securities issued by the Company, unless earlier revoked by the undersigned in a signed writing delivered to the foregoing attorneys-in-fact.

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 6<sup>th</sup> day of February, 2018.

RHO VENTURES V, L.P.

By: RMV V, L.L.C., its General Partner

By: Rho Capital Partners LLC, its Managing Member

By: /s/ Habib Kairouz

Habib Kairouz

Managing Member

RMV V, L.L.C.

By: Rho Capital Partners LLC, its Managing Member

By: /s/Habib Kairouz

Habib Kairouz

Managing Member

RHO CAPITAL PARTNERS LLC

By: /s/Habib Kairouz

Habib Kairouz

Managing Member

RHO VENTURES V AFFILIATES, L.L.C.

By: RMV V, L.L.C., its Managing Member

By: Rho Capital Partners LLC, its Managing Member

By: /s/Habib Kairouz

Habib Kairouz

Managing Member

PINNACLE INVESTMENT PARTNERS "Q-6", L.P.

By: Pinnacle Management Partners LLC, its General Partner

By: RUGU Partners LLC, its Managing Member

By: /s/ Joshua Ruch

Joshua Ruch

Managing Member

PINNACLE MANAGEMENT PARTNERS LLC

By: RUGU Partners LLC, its Managing Member

By: /s/ Joshua Ruch

Joshua Ruch

Managing Member

RUGU PARTNERS LLC

By: /s/ Joshua Ruch  
Joshua Ruch  
Managing Member

KARIBA LLC

By: /s/ Joshua Ruch  
Joshua Ruch  
Managing Member

/s/Habib Kairouz  
Habib Kairouz

/s/ Joshua Ruch  
Joshua Ruch

/s/ Mark Leschly  
Mark Leschly