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June 14, 2017

VIA EDGAR

U.S. Securities and Exchange Commission
 Division of Corporation Finance
 Office of Healthcare and Insurance
 100 F Street, N.E.
 Washington, D.C. 20549

Attention: Mary Beth Breslin — Legal
 Keira Nakada/ Sharon Blume — Accounting

Re: Mersana Therapeutics, Inc.
 Registration Statement on Form S-1
 Filed June 1, 2017
 Letter dated June 2, 2017
 File No. 333-218412

Ladies and Gentlemen:

On behalf of Mersana Therapeutics, Inc. (the “Company”), and pursuant to the applicable provisions of the Securities Act of 1933, as amended (the “Securities Act”), and the rules and regulations promulgated thereunder, we are responding via EDGAR to the comment letter to Anna Protopapas of the Company dated June 7, 2017, from the staff of the Securities and Exchange Commission (the “Staff”) regarding the above-referenced Registration Statement on Form S-1. The Company confirms that as of the date of this letter it continues to be an “emerging growth company,” as defined in Section 2(a)(19) of the Securities Act.

For reference purposes, the comment contained in the Staff’s letter dated June 7, 2017, is reproduced below in italics and the corresponding response is shown below the comment.

Letter dated June 2, 2017

Critical Accounting Policies and Estimates
Common Stock Valuation Methodologies, page 74

1. *In your letter dated June 2, 2017 you state that the IPO price assumes the conversion of the Company’s convertible preferred stock to common stock upon the completion of this offering. However, on page F-33 of Form S-1 you disclose that “Each share of Preferred Stock will*

automatically convert into shares of common stock upon the closing of an initial public offering for which the offering price is not less than two times the original issue price of the Series C-1 preferred Stock.” Since you also disclose on page F-32 that Series C-1 were issued at \$2.25568 per share, your estimated IPO price range does not appear to satisfy the condition for the automatic conversion. Please tell us whether the holders of at least a majority of the outstanding shares of Preferred Stock have voted to or provided written consent to convert their preferred stock into common stock at the time of the IPO or why such assumption is appropriate.

Response to Comment 1:

In response to the Staff’s comment, the Company confirms that the holders of at least a majority of the outstanding shares of Preferred Stock have provided written consent to convert all outstanding shares of preferred stock into common stock at the time of the IPO.

* * *

We hope that the foregoing has been responsive to the Staff’s comment. If you have any questions about this letter or require any further information, please call the undersigned at (617) 951-7826 or William J. Michener of our offices at (617) 951-7247.

Very truly yours,

/s/ Marc A. Rubenstein

Marc A. Rubenstein

cc: Eva M. Jack (Mersana Therapeutics, Inc.)
William J. Michener (Ropes & Gray LLP)