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July 12, 2018

VIA EDGAR

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

Attention: Abigail Jacobs
Erin Jaskot

Re: Mersana Therapeutics, Inc.
Registration Statement on Form S-3, filed July 2, 2018
File No. 333-226055

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, and the rules and regulations thereunder, we are filing with the Securities and Exchange Commission (the "Commission"), via EDGAR, Amendment No. 1 ("Amendment No. 1") to the above-referenced Registration Statement, filed on July 2, 2018 (the "Registration Statement"). Amendment No. 1 reflects revisions to the Registration Statement made in response to the comment letter to Anna Protopapas of the Company dated July 11, 2018 (the "Comment Letter") from the staff of the Commission (the "Staff"), as well as certain other updated information.

For your convenience, the Company is supplementally providing to the Staff three (3) copies of Amendment No. 1, which have been marked to indicate the changes from the Registration Statement.

For the convenience of the Staff's review, we have set forth the comment contained in the Comment Letter in italics below followed by the response of the Company.

Form S-3 filed July 2, 2018

Incorporation of Certain Documents by Reference, page 14

1. Please revise this section to include the Current Report on Form 8-K that you filed on June 29, 2018. Refer to Item 12 of Form S-3.

Response:

In response to the Staff's comment, the Company has revised the disclosure on pages 14 and S-11 to reference the Current Report on Form 8-K in the list of documents incorporated by reference.

We hope that the foregoing has been responsive to the Staff's comments. If you have any questions or comments about this letter or need any further information, please call the undersigned at (617) 951-7826.

Very truly yours,

/s/ Marc A. Rubenstein

Marc A. Rubenstein

cc: David A. Spellman (Mersana Therapeutics, Inc.)
William J. Michener (Ropes & Gray LLP)