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December 21, 2016

VIA EDGAR

United States Securities
and Exchange Commission
100 F Street, NE
Mail Stop 4546
Washington, D.C. 20549
Attention: Suzanne Hayes
Assistant Director, Office of Healthcare and Insurance

**Re: Heat Biologics, Inc.
Registration Statement on Form S-3
Filed December 1, 2016
File No. 333-214868**

Dear Ms. Hayes:

Thank you for your letter dated December 14, 2016 regarding the Heat Biologics, Inc. ("Heat") Registration Statement on Form S-3 (File No. 333-214868) (the "Form S-3"). In order to assist you in your review of Heat's Form S-3, we hereby submit a letter responding to the comments and Amendment No. 1 to Form S-3 marked to show changes. For your convenience, we have set forth below the Staff's numbered comments in their entirety in italicized text followed by our responses thereto.

General

- 1. We note that you have a pending request for confidential treatment. Please be advised that we will not be in a position to declare your registration statement effective until we resolve any issues concerning the confidential treatment request.*

Response: The Company understands and acknowledges the Staff's comment. The Company will submit a request for acceleration of effectiveness only after the request for confidential treatment has been resolved with the Staff.

Incorporation of Certain Documents by Reference, page 11

2. Please update this section to incorporate by reference your Current Reports on Form 8-K filed on December 6, 2016 and December 9, 2016. For guidance, please see *Compliance and Disclosure Interpretations, Securities Act Forms, Question 123.05*.

Response: We have revised the disclosure in the “Incorporation of Certain Documents by Reference” section of the Form S-3 to include the Current Reports on Form 8-K filed by Heat on December 6, 2016 and December 9, 2016. In addition, we have included the following language in that section of the Form S-3 in accordance with the above-referenced Question 123.05 of the Staff’s Compliance Disclosure Interpretations regarding Securities Act Forms: “including all such documents that we [Heat] may file with the SEC pursuant to the Exchange Act after the date of this registration statement and prior to the effectiveness of this registration statement...” As a result, we believe that all future Exchange Act filings are adequately incorporated by reference into the Form S-3.

* * *

We acknowledge that the adequacy and accuracy of the disclosure in our filings is our responsibility. We acknowledge that the staff comments or changes to disclosure do not foreclose the Commission from taking any action with respect to the filings. We acknowledge that the company may not assert staff comments as a defense in any proceedings initiated by the Commission or any person under the federal securities laws of the United States.

If you have any questions or need additional information, please contact the undersigned at (516) 496-2223 or (212) 907-6457, or Patrick J. Egan at (914) 557-5574.

Sincerely,

/s/ Leslie Marlow

Leslie Marlow

Enclosures
cc: Heat Biologics, Inc.