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August 16, 2018

VIA EDGAR

United States Securities
and Exchange Commission
Division of Corporation Finance
Office of Healthcare & Insurance
100 F Street, NE
Washington, D.C. 20549
Attention: Ms. Irene Paik
Ms. Christine Westbrook

Re: Synthetic Biologics, Inc.
Registration Statement on Form S-3
Filed August 1, 2018
File No. 333-226500

Dear Mss. Paik and Westbrook:

Thank you for your letter dated August 15, 2018 (the "Comment Letter") regarding the Synthetic Biologics, Inc. (the "Company") Registration Statement on Form S-3 (File No. 333-226500) filed with the Securities and Exchange Commission (the "Commission") on August 1, 2018 (the "Registration Statement on Form S-3"). In order to assist the Staff in its review, we hereby submit this letter responding to the comment in the Comment Letter. For your convenience, we have set forth below the Staff's comment in its entirety in bold and italicized text followed by our response thereto.

Registration Statement on Form S-3 filed August 1, 2018

General

- Please tell us how you are eligible to conduct your offering on Form S-3. We note that the aggregate market value of your voting and non-voting common equity held by nonaffiliates appears to be less than \$75 million during the 60 days prior to filing the registration statement, so that you would not meet the requirement of General Instruction I.B.1 to use Form S-3. If you are relying on General Instruction I.B.4 to use Form S-3, please tell us how you have met the informational requirements to warrant holders required by General Instruction I.B.4(b) and (c). If you are relying on General Instruction I.B.6 to use Form S-3, please include the information on your prospectus cover page that is required by Instruction 7 to General Instruction I.B.6 of Form S-3.*
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Response:

The Company acknowledges that it is not eligible to conduct this offering on a Form S-3 registration statement under General Instruction I.B.1 of Form S-3 as the aggregate market value of the voting and non-voting common equity held by non-affiliates of the Company, computed by use of the price at which the Company's common stock was last sold on the NYSE American, LLC as of a date within 60 days prior to the filing of the Registration Statement on Form S-3, did not equal or exceed \$75 million. In addition, the Company is not relying on General Instruction I.B.6 to use the Registration Statement on Form S-3. However, the Company is eligible to conduct this offering on a Form S-3 registration statement since, as discussed in greater detail below, it has complied with General Instruction I.B.4 of Form S-3.

General Instruction I.B.4 permits registrants meeting the registrant requirements specified in General Instruction I.A to register on Form S-3 securities to be offered upon the exercise of outstanding warrants issued by the issuer of the securities to be offered, provided that (i) the issuer has sent, within the twelve calendar months immediately before the registration statement is filed, material containing the information required by Rule 14a-3(b) (the "Annual Report Information") under the Securities Exchange Act of 1934, as amended, to all record holders of the warrants, and (ii) the issuer has provided, within the twelve calendar months immediately before the Form S-3 registration statement is filed, the applicable information required by Items 401, 402, 403 and 407(c)(3), (d)(4), (d)(5) and (e)(4) of Regulation S-K (collectively, the "Regulation S-K Information") to all holders of the warrants.

The Company confirms that, during 2018 and prior to the filing of the Registration Statement on Form S-3, it distributed to all record holders and holders of the outstanding warrants a copy of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 (the "Form 10-K") via e-mails sent directly by the Company and by engaging Broadridge Financial Solutions to conduct a mailing of hard copies. The Form 10-K contained all of the Annual Report Information and the Regulation S-K Information that is required of the Company under General Instruction I.B.4 of Form S-3.

Based upon the foregoing, we respectfully submit that the Company is eligible to conduct this offering on a Form S-3 registration statement.

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and Exchange Commission
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If you have any questions or need additional information regarding the Form S-3 or our response to the Comment Letter, please do not hesitate to 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

Enclosure

cc: Steven A. Shallcross
Interim Chief Executive Officer and Chief Financial Officer,
Synthetic Biologics, Inc.
