UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (date of earliest event reported): August 5, 2016

Synthetic Biologics, Inc.

(Exact name of Registrant as specified in its charter)

Nevada01-1258413-3808303(State or other(Commission(I.R.S. Employerjurisdiction of incorporation)File Number)Identification No.)

9605 Medical Center Drive, Suite 270 Rockville, MD 20850 (Address of principal executive offices and zip code)

Registrant's telephone number, including area code: (301) 417-4364

(Former name or former address, if changed since last report): N/A

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- " Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- " Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 1.01. Entry into a Material Definitive Agreement.

On August 5, 2016, Synthetic Biologics, Inc. (the "Company") and FBR Capital Markets & Co. ("FBR") entered into an At Market Issuance Sales Agreement (the "Sales Agreement") pursuant to which the Company may sell from time to time, at its option, shares of its common stock, par value \$0.001 per share, having an aggregate offering price of up to \$40,000,000 through FBR, as sales agent. Sales of shares of common stock made pursuant to the Sales Agreement, if any, will be made pursuant to the Company's effective shelf registration statement on Form S-3 (File No. 333-206266) filed with the U.S. Securities and Exchange Commission ("SEC"), the base prospectus, dated August 18, 2015, filed as part of such registration statement and the prospectus supplement, dated August 5, 2016, filed by the Company with the SEC.

Under the terms of the Sales Agreement, the Company may sell shares of its common stock through FBR by any method permitted that is deemed an "at the market offering" as defined in Rule 415 under the Securities Act of 1933, as amended (the "Securities Act"), including sales made directly on or through the NYSE MKT, the existing trading market for the Company's common stock, sales made to or through a market maker other than on an exchange or otherwise, in negotiated transactions at market prices, and/or any other method permitted by law. FBR will use its commercially reasonable efforts consistent with its normal trading and sales practices to sell the Company's common stock from time to time, based upon the Company's instructions (including any price, time or size limits or other customary parameters or conditions the Company may impose). Actual sales will depend on a variety of factors to be determined by the Company from time to time, including (among others) market conditions, the trading price of the Company's common stock, capital needs and determinations by the Company of the appropriate sources of funding for the Company. The Company is not obligated to make any sales of common stock under the Sales Agreement and the Company cannot provide any assurances that it will issue any shares pursuant to the Sales Agreement. The Company will pay a commission rate equal to up to 3.0% of the gross sales price per share sold and up to \$30,000 in expense reimbursement, including reasonable legal fees incurred by FBR. The Company has also agreed pursuant to the Sales Agreement to provide FBR with customary indemnification and contribution rights.

The Sales Agreement may be terminated at any time by the Company upon five days' notice to FBR, or by FBR upon ten days' notice to the Company or at any time by FBR in certain circumstances, including upon the occurrence of an event that would be reasonably likely to have a material adverse effect on the Company's assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity or results of operations.

This Current Report on Form 8-K shall not constitute an offer to sell or the solicitation of an offer to buy any security nor shall there be any sale of these securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state.

The Sales Agreement is filed as Exhibit 1.1 to this Current Report. The description of the Sales Agreement does not purport to be complete and is qualified in its entirety by reference to the Sales Agreement filed as an exhibit to this Current Report on Form 8-K and is incorporated herein by reference. The opinion of the Company's counsel regarding the validity of the shares that will be issued pursuant to the Sales Agreement is also filed herewith as Exhibit 5.1.

The representations, warranties and covenants contained in the Sales Agreement were made solely for the benefit of the parties to the Sales Agreement. In addition, such representations, warranties and covenants (i) are intended as a way of allocating the risk between the parties to the Sales Agreement and not as statements of fact, and (ii) may apply standards of materiality in a way that is different from what may be viewed as material by stockholders of, or other investors in, the Company. Accordingly, the Sales Agreement is included with this filing only to provide investors with information regarding the terms of transaction, and not to provide investors with any other factual information regarding the Company. Stockholders should not rely on the representations, warranties and covenants or any descriptions thereof as characterizations of the actual state of facts or condition of the Company or any of its subsidiaries or affiliates. Moreover, information concerning the subject matter of the

representations and warranties may change after the date of the Sales Agreement, which subsequent information may or may not be fully reflected in public disclosures.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
1.1	At Market Issuance Sales Agreement, dated August 5, 2016, by and between Synthetic Biologics, Inc. and FBR Capital Markets & Co.
5.1	Opinion of Parsons Behle & Latimer
23.1	Consent of Parsons Behle & Latimer (included in Exhibit 5.1)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

SYNTHETIC BIOLOGICS, INC.

Date: August 5, 2016 By: /s/ Steven A. Shallcross

Name: Steven A. Shallcross Title: Chief Financial Officer

EXHIBIT INDEX

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