

U.S. SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 12B-25

COMMISSION FILE NUMBER: 001-12584

NOTIFICATION OF LATE FILING

Check One:

- ☒ Form 10-K and Form 10
- ☐ Form 20-F
- ☐ Form 11-K
- ☐ Form 10-Q and Form 10
- ☐ Form 10-D
- ☐ Form N-SAR
- ☐ Form N-CSR

For Period Ended: December 31, 2012

- ☐ Transition Report on Form 10-K
- ☐ Transition Report on Form 20-F
- ☐ Transition Report on Form 11-K
- ☐ Transition Report on Form 10-Q
- ☐ Transition Report on Form N-SAR

For the Transition Period Ended: N/A

Nothing in this form shall be construed to imply that the Commission has verified any information contained herein.

If the notification relates to a portion of the filing checked above, identify the Item(s) to which the notification relates: N/A

PART I. REGISTRANT INFORMATION.

The Registrant is Synthetic Biologics, Inc. (the "Company"). The address of the Company's principal executive office is 155 Gibbs Street, Suite 412, Rockville, Maryland 20850.

PART II. RULES 12B-25 (b) AND (c)

If the subject report could not be filed without unreasonable effort or expense and the registrant seeks relief pursuant to Rule 12b-25(b), the following should be completed. (Check appropriate box.)

- ☒ (a) The reasons described in reasonable detail in Part III of this form could not be eliminated without unreasonable effort or expense;
- ☒ (b) The subject annual report, semi-annual report, transition report on Form 10-K, Form 20-F, Form 11-K, Form N-SAR or Form N-CSR, or portion thereof will be filed on or before the fifteenth calendar day following the prescribed due date; or the subject quarterly report or transition report on Form 10-Q or subject distribution report on Form 10-D, or portion thereof will be filed on or before the fifth calendar day following the prescribed due date; and
- ☐ (c) The accountant's statement or other exhibit required by Rule 12b-25(c) has been attached if applicable.

PART III. NARRATIVE

The Registrant is unable to file, without unreasonable effort and expense, its Annual Report on Form 10-K for the period ended December 31, 2012 because the Registrant is still compiling information and the auditors have not completed their review of the financial statements for that period. It is anticipated that the Annual Report on Form 10-K, along with the audited financial statements, will be filed on or before the deadline.

PART IV. OTHER INFORMATION

(1) Name and telephone number of person to contact in regard to this notification:

C. Evan Ballantyne (734) 332-7800

(2) Have all other periodic reports required under section 13 or 15(d) of the Securities Exchange Act of 1934 or section 30 of the Investment Company Act of 1940 during the preceding 12 months or for such shorter period that the registrant was required to file such report(s) been filed? If the answer is no, identify report(s). ☒ Yes ☐ No

(3) Is it anticipated that any significant change in results of operations from the corresponding period for the last fiscal year will be reflected by the earnings to be included in the subject report or portion thereof? ☒ Yes ☐ No

The Registrant does not anticipate having any revenue for year ended December 31, 2012. General and administrative expenses are expected to be \$5.0 million for the year ended December 31, 2012, compared to \$2.6 million for the same period in 2011. Research and development expenses are expected to be \$12.3 million for the year ended December 31, 2012, compared to \$3.3 million for the same period in 2011. Net loss is expected to be \$17.1 million for the year ended December 31, 2012 compared to \$8.1 million for the same period in 2011.

SYNTHETIC BIOLOGICS, INC.

has caused this notification to be signed on its behalf by the undersigned thereunto duly authorized.

Dated: April 1, 2013

By: /s/ C. Evan Ballantyne

Name: C. Evan Ballantyne

Title: Chief Financial Officer