

Synthetic Biologics, Inc.  
Form 4  
October 31, 2012

**FORM 4**

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

OMB APPROVAL

OMB Number: 3235-0287  
Expires: January 31, 2015  
Estimated average burden hours per response... 0.5

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
**KIRK RANDAL J**

(Last) (First) (Middle)

**C/O THIRD SECURITY, LLC, 1881 GROVE AVENUE**

(Street)

**RADFORD, VA 24141**

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol  
**Synthetic Biologics, Inc. [SYN]**

3. Date of Earliest Transaction  
(Month/Day/Year)  
**10/29/2012**

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

\_\_\_ Director \_\_\_X\_\_\_ 10% Owner  
\_\_\_ Officer (give title below) \_\_\_ Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)

\_\_\_ Form filed by One Reporting Person  
\_X\_ Form filed by More than One Reporting Person

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price
Common Stock	10/29/2012		P		3,125,000	A	\$ 1.6
Common Stock					6,675,768	I	

by NRM VII Holdings (1)

by Intrexon (2)

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474 (9-02)

number.

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned**  
(e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)	7. Title and Amount of Underlying Securities (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Owned Following Reporting Transaction (Instr. 6)
				Code	V (A) (D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
KIRK RANDAL J C/O THIRD SECURITY, LLC 1881 GROVE AVENUE RADFORD, VA 24141		X		
INTREXON CORP C/O LEGAL DEPARTMENT 20358 SENECA MEADOWS PARKWAY GERMANTOWN, MD 20876		X		

## Signatures

/s/ Randal J. Kirk 10/31/2012  
 \*\*Signature of Reporting Person Date

/s/ Randal J. Kirk, CEO Intrexon Corporation 10/31/2012  
 \*\*Signature of Reporting Person Date

## Explanation of Responses:

- \* If the form is filed by more than one reporting person, see Instruction 4(b)(v).
  - \*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).
- Randal J. Kirk controls NRM VII Holdings I, LLC ("NRM VII Holdings"). Shares held by this entity may be deemed to be indirectly
- (1) beneficially owned (as defined under Rule 13d-3 promulgated under the Securities Exchange Act of 1934, as amended) by Mr. Kirk. Mr. Kirk disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein.
  - (2) Randal J. Kirk, directly and through certain affiliates, has voting and dispositive power over a majority of the outstanding capital stock of Intrexon Corporation ("Intrexon"). Mr. Kirk may therefore be deemed to have voting and dispositive power over the shares of the issuer

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owned by Intrexon. Shares held by Intrexon may be deemed to be indirectly beneficially owned (as defined under Rule 13d-3 promulgated under the Securities Exchange Act of 1934, as amended) by Mr. Kirk. Mr. Kirk disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.