

bluebird bio, Inc.  
Form 4  
September 12, 2014

**FORM 4** UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

OMB APPROVAL

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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 \*  
THIRD ROCK VENTURES LP

2. Issuer Name and Ticker or Trading Symbol  
bluebird bio, Inc. [BLUE]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)  
29 NEWBURY STREET, 3RD FLOOR

3. Date of Earliest Transaction (Month/Day/Year)  
09/11/2014

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

(Street)  
BOSTON, MA 02116

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

6. Individual or Joint/Group Filing(Check Applicable Line)  
\_\_\_\_ Form filed by One Reporting Person  
 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 Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price
Common Stock	09/11/2014		S		87,000	D	\$ 36.52 (1)
Common Stock	09/11/2014		J	(3)	1,076,920	D	\$ 0
Common Stock	09/11/2014		J	(4)	79,062	A	\$ 0
Common Stock	09/11/2014		J	(6)	79,062	D	\$ 0
Common Stock	09/12/2014		S		38,000	D	\$ 1,215,054 36.59

(7)

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

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(9-02)

**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 Beneficially Owned Following Reported 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
THIRD ROCK VENTURES LP 29 NEWBURY STREET, 3RD FLOOR BOSTON, MA 02116		X		
Third Rock Ventures GP, L.P. 29 NEWBURY STREET, 3RD FLOOR BOSTON, MA 02116		X		
TRV GP, LLC 29 NEWBURY STREET, 3RD FLOOR BOSTON, MA 02116		X		

## Signatures

/s/ Kevin Gillis, Chief Financial Officer of TRV GP, LLC, general partner of Third Rock Ventures GP, L.P., general partner of Third Rock Ventures, L.P.

09/12/2014

\_\_Signature of Reporting Person

Date

/s/ Kevin Gillis, Chief Financial Officer of TRV GP, LLC, general partner of Third Rock Ventures GP, L.P.

09/12/2014

\_\_Signature of Reporting Person

Date

/s/ Kevin Gillis, Chief Financial Officer of TRV GP, LLC

09/12/2014

\_\_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).

(1) The price reported in Column 4 is a weighted average price. These shares were sold in multiple transactions at prices ranging from \$36.00 to \$36.95, inclusive. Each Reporting Person undertakes to provide to bluebird bio Inc., any security holder of bluebird bio Inc., or the staff of the Securities and Exchange Commission (the "SEC"), upon request, full information regarding the number of shares sold at each separate price within the range set forth in this footnote.

(2) The shares are directly held by Third Rock Ventures, L.P. ("TRV"). The general partner of TRV is Third Rock Ventures GP, L.P. ("TRV GP"). The general partner of TRV GP is TRV GP, LLC ("TRV GP LLC") and, as such, each of TRV GP and TRV GP LLC exercises shared voting and investment power over the shares held of record by TRV. Each of the Reporting Persons disclaims beneficial ownership of the shares except to the extent of their pecuniary interest therein, if any.

(3) Distribution of shares in kind by TRV on a pro rata basis to its partners.

(4) TRV GP received shares distributed in kind by TRV on a pro rata basis to its partners.

(5) The shares are directly held by TRV GP. As such, TRV GP LLC exercises voting and investment power over the shares held of record by TRV GP. Each of the filing persons disclaims beneficial ownership of the shares except to the extent of their pecuniary interest therein, if any.

(6) Distribution of shares in kind by TRV GP on a pro rata basis to its partners.

(7) The price reported in Column 4 is a weighted average price. These shares were sold in multiple transactions at prices ranging from \$36.25 to \$37.005, inclusive. Each Reporting Person undertakes to provide to bluebird bio Inc., any security holder of bluebird bio Inc., or the staff of the SEC, upon request, full information regarding the number of shares sold at each separate price within the range set forth in this footnote.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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