

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

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

1. Name and Address of Reporting Person * THIRD ROCK VENTURES LP (Last) (First) (Middle) 29 NEWBURY STREET (Street) BOSTON MA 02116 (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol bluebird bio, Inc. [BLUE]	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) 06/24/2013	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) Form filed by One Reporting Person <input checked="" type="checkbox"/> 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	06/24/2013		C		4,734,248 ⁽¹⁾	A	\$ 0	4,734,248	D ⁽²⁾	

**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(s) (Instr. 4)	10. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V		Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Series B Convertible Preferred Stock	(3)	06/24/2013		C		64,377,682	(3)	(3)	Common Stock	3,394,194	(3)	0	D (2)	
Series C Convertible Preferred Stock	(3)	06/24/2013		C		14,379,294	(3)	(3)	Common Stock	758,121	(3)	0	D (2)	
Series D Convertible Preferred Stock	(3)	06/24/2013		C		11,037,527	(3)	(3)	Common Stock	581,933	(3)	0	D (2)	

1. Name and Address of Reporting Person *

THIRD ROCK VENTURES LP

(Last) (First) (Middle)

29 NEWBURY STREET

(Street)

BOSTON

MA

02116

(City)

(State)

(Zip)

1. Name and Address of Reporting Person *

TRV GP, LLC

(Last) (First) (Middle)

29 NEWBURY STREET

(Street)

BOSTON

MA

02116

(City)

(State)

(Zip)

1. Name and Address of Reporting Person *

Third Rock Ventures GP, L.P.

(Last) (First) (Middle)

29 NEWBURY STREET

(Street)

BOSTON

MA

02116

(City)

(State)

(Zip)

Explanation of Responses:

1. Represents the total number of shares received upon conversion of shares of the Issuer's Series B Convertible Preferred Stock (the "Series B Shares"), Series C Convertible Preferred Stock (the "Series C Shares") and Series D Convertible Preferred Stock (the "Series D Shares" and together with the Series B Shares and the Series C Shares, collectively, the "Preferred Shares").
2. The general partner of Third Rock Ventures, L.P. is Third Rock Ventures GP, LP ("TRV GP"). The general partner of TRV GP is TRV GP, LLC. TRV GP and TRV GP, LLC disclaim beneficial ownership of such shares, except to the extent of any pecuniary interest therein.
3. Effective upon the closing of the Issuer's initial public offering of its Common Stock, each Preferred Share automatically converted at a ratio of 18.967-to-one into the number of shares of Common Stock shown in column 7. The Preferred Shares had no expiration date.

By: Third Rock Ventures GP, L.P., its general partner By: TRV GP, LLC, its general partner By: /s/ Kevin Gillis Kevin Gillis, Manager	06/26/2013
/s/ Kevin Gillis, Manager By: TRV GP, LLC, its general partner By: /s/ Kevin Gillis, Manager	06/24/2013
** Signature of Reporting Person	Date

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

* 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).

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

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.