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

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**FORM 8-K**

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**CURRENT REPORT**

**Pursuant to Section 13 or 15(d) of The Securities Exchange Act of 1934**

**Date of Report (Date of Earliest Event Reported): July 30, 2014**

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**bluebird bio, Inc.**

(Exact name of registrant as specified in its charter)

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**DELAWARE**  
(State or other jurisdiction  
of incorporation)

**001-35966**  
(Commission  
File Number)

**13-3680878**  
(I.R.S. Employer  
Identification No.)

**150 Second Street**  
**Cambridge, MA**  
(Address of principal executive offices)

**02141**  
(Zip Code)

**Registrant's telephone number, including area code (339) 499-9300**

**Not Applicable**

(Former name or former address, if changed since last report)

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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))
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**Item 8.01 Other Events.**

In connection with its acquisition of all of the outstanding capital stock of Precision Genome Engineering, Inc. (“Pregenen”) and the issuance of shares of common stock (the “Shares”) of bluebird bio, Inc. (the “Company”) to the former stakeholders of Pregenen, the Company filed a prospectus supplement to its registration statement on Form S-3 ASR (File No. 333-197192) on July 30, 2014 covering the resale of the Shares.

In connection with the resale of the Shares, the Company is filing the opinion of Goodwin Procter LLP as Exhibit 5.1 to this Current Report on Form 8-K.

**Item 9.01 Financial Statements and Exhibits.**

(d) *Exhibits*

5.1 Opinion of Goodwin Procter LLP.

23.1 Consent of Goodwin Procter LLP (included in Exhibit 5.1 above).

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**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.

Date: July 30, 2014

**bluebird bio, Inc.**

By: /s/ Jason F. Cole

Jason F. Cole

*Senior Vice President and General Counsel*

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**EXHIBIT INDEX**

<u>Exhibit No.</u>	<u>Description</u>
5.1	Opinion of Goodwin Procter LLP.
23.1	Consent of Goodwin Procter LLP (included in Exhibit 5.1 above).



Goodwin Procter LLP  
Counselors at Law  
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Boston, MA 02109

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goodwinprocter.com

July 30, 2014

bluebird bio, Inc.  
150 Second Street, Third Floor  
Cambridge, MA 02141

Re: Securities Registered under Registration Statement on Form S-3

Ladies and Gentlemen:

Reference is made to our opinion letter dated July 2, 2014 and included as Exhibit 5.1 to the automatic shelf registration statement on Form S-3 (File No. 333-197192) (the "Registration Statement") filed on July 2, 2014 by bluebird bio, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"). The Registration Statement became effective under the Securities Act upon filing on July 2, 2014. We are delivering this supplemental opinion letter in connection with the prospectus supplement (the "Prospectus Supplement") filed on July 30, 2014 by the Company with the Commission pursuant to Rule 424(b)(7) under the Securities Act. The Prospectus Supplement relates to the registration of 504,903 shares of the Company's common stock, par value \$0.01 per share (the "Common Stock"), of which 410,786 shares of Common Stock (the "Issued Shares") have been issued as of the date of this opinion letter pursuant to that certain Stock Purchase Agreement, dated June 30, 2014, by and among the Company, Precision Genome Engineering, Inc. and the other parties thereto (the "Stock Purchase Agreement") and up to an additional 94,117 shares of Common Stock (the "Additional Shares") may be issued pursuant to the terms of the Stock Purchase Agreement.

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinion set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, on certificates of officers of the Company.

The opinion set forth below is limited to the Delaware General Corporation Law (which includes reported judicial decisions interpreting the Delaware General Corporation Law).

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Based on the foregoing, we are of the opinion that the Issued Shares have been validly issued and are fully paid and non-assessable and that the Additional Shares, when issued pursuant to the terms of the Stock Purchase Agreement, will be validly issued, fully paid and non-assessable.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ GOODWIN PROCTER LLP

GOODWIN PROCTER LLP