



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

June 10, 2013

Via E-mail

Nick Leschly
President and Chief Executive Officer
bluebird bio, Inc.
840 Memorial Drive, 4th Floor
Cambridge, MA 02139

**Re: bluebird bio, Inc.
Amendment No. 2 to Registration Statement on Form S-1
Submitted June 4, 2013
File No. 333-188605**

Dear Mr. Leschly:

We have reviewed your amended registration statement filed on June 4, 2013 and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. Where you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Prospectus Summary, page 1
The Offering, page 9

1. Please revise the filing to address the following:
 - Please reconcile the difference between the 3,839,025 shares of common stock issuable upon the exercise of outstanding stock options as of May 31, 2013 having a weighted average exercise price of \$3.69 per share and 3,652,786 shares of common stock issuable upon the exercise of outstanding stock options as of March 31, 2013 having a weighted-average exercise price of \$3.46 per share as disclosed in Capitalization and elsewhere. If this difference relates to additional options issued subsequent to March 31, 2013, please disclose such and include in your disclosure to whom the options were issued, at what exercise price and what vesting terms.
 - The difference between the 358,869 shares of common stock on page 10 and 596,131 shares of common stock on page 59 that are reserved for issuance pursuant to future equity awards under your 2010 Stock Option and Grant Plan, which will become

available for issuance under your 2013 Stock Option and Incentive Plan immediately prior to this offering.

Notes to Consolidated Financial Statements

Note 9: Convertible Preferred Stock, page F-29

2. You disclose here that the number of shares of common stock to be outstanding after this offering is based on 16,388,510 additional shares of your common stock issuable upon conversion of all of your outstanding shares of preferred stock upon closing of this offering. In Note 16 to your financial statements on page F-48 you indicate that shares of common stock reserved for issuance upon the conversion of the Company's Series A-1 Preferred Stock, Series A-2 Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, and Series D Preferred Stock were proportionately reduced and the respective conversion prices were proportionately increased to reflect the one-for-18.967 reverse stock split. However, in your conversion discussion starting on page F-31 you still appear to reflect the original conversion prices and an effective one-to-one conversion rate. Although you reference the reader to Note 16(B), it appears that each of your conversion prices should be adjusted by your reverse stock split rate and that the effective conversion rate should be disclosed as one preferred shares converts into 0.0527 shares of common stock. Please revise your conversion rate disclosure here and throughout the filing to reflect your common stock reverse split or tell us why a revision is not appropriate.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

You may contact Sarah Parikh, Staff Accountant, at (202) 551-3627 or Mark Brunhofer, Staff Accountant, at (202) 551-3638 if you have questions regarding comments on the financial statements and related matters. Please contact Karen Ubell, Staff Attorney, at (202) 551-3873 or me at (202) 551-2715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
Michael H. Bison, Esq.
Goodwin Procter LLP