
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13G

(Rule 13d-102)

**INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULES 13d-1(b),
(c), AND (d) AND AMENDMENTS THERETO FILED PURSUANT TO RULE 13d-2
(Amendment No.)***

bluebird bio, Inc.

(Name of Issuer)

Common Stock, \$0.01 par value per share
(Title of Class of Securities)

09609G100
(CUSIP Number)

December 31, 2013
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, *see the Notes*).

| | | |
|--|--|---------------------------------------|
| 1. | NAMES OF REPORTING PERSONS Coöperatieve AAC LS U.A. | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/> | |
| 3. | SEC USE ONLY | |
| 4. | CITIZENSHIP OR PLACE OF ORGANIZATION The Netherlands | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 5. | SOLE VOTING POWER 0 |
| | 6. | SHARED VOTING POWER 1,251,526 |
| | 7. | SOLE DISPOSITIVE POWER 0 |
| | 8. | SHARED DISPOSITIVE POWER 1,251,526 |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,251,526 | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 5.2% | |
| 12. | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO | |

| | | |
|--|--|---------------------------------------|
| 1. | NAMES OF REPORTING PERSONS Forbion 1 Management B.V. | |
| 2. | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="checkbox"/> (b) <input type="checkbox"/> | |
| 3. | SEC USE ONLY | |
| 4. | CITIZENSHIP OR PLACE OF ORGANIZATION The Netherlands | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH | 5. | SOLE VOTING POWER 0 |
| | 6. | SHARED VOTING POWER 1,251,526 |
| | 7. | SOLE DISPOSITIVE POWER 0 |
| | 8. | SHARED DISPOSITIVE POWER 1,251,526 |
| 9. | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,251,526 | |
| 10. | CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="checkbox"/> | |
| 11. | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9 5.2% | |
| 12. | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) OO | |

Item 1(a). Name of Issuer:

bluebird bio, Inc. (the "Issuer")

Item 1(b). Address of Issuer's Principal Executive Offices:

150 Second Street, Cambridge, MA 02141

Item 2(a). Name of Person Filing:

This Statement is being filed by Coöperatieve AAC LS U.A. ("COOP"), and Forbion 1 Management B.V. ("Forbion"), the director of COOP. COOP and Forbion are sometimes referred to collectively herein as the "Reporting Persons".

Item 2(b). Address of Principal Business Office or, if None, Residence:

The address of the principal business and principal office of each of the Reporting Persons is c/o Coöperatieve AAC LS U.A., PO Box 5187, 1410 AD Naarden, The Netherlands.

Item 2(c). Citizenship:

Coöperatieve AAC LS U.A. – The Netherlands
Forbion 1 Management B.V. – The Netherlands

Item 2(d). Title of Class of Securities:

Common Stock, \$0.01 par value ("Common Stock").

Item 2(e). CUSIP Number:

09609G100

Item 3. If this statement is filed pursuant to Rule 13d-1(b) or Rule 13d-2(b) or (c), check whether the person filing is a:

Not applicable.

Item 4. Ownership.**(a) Amount Beneficially Owned:**

COOP is the beneficial owner of 1,251,526 shares of Common Stock as of December 31, 2013 (the "Shares"). Forbion, the director of COOP, has voting and investment power over the shares held by COOP, which are exercised through Forbion's investment committee, consisting of L.P.A. Bergstein, H. A. Slootweg, M. A. van Osch, G. J. Mulder and S. J. H. van Deventer. None of the members of the investment committee have individual voting and investment power with respect to such shares, and the members disclaim beneficial ownership of such shares except to the extent of their proportionate pecuniary interests therein.

- (b) Percent of class: See Line 11 of cover sheets. The percentages set forth on the cover for each Reporting Person are calculated based on 23,780,211 shares of Common Stock reported by the Issuer to be outstanding as of October 31, 2013 on Form 10-Q as filed with the Securities and Exchange Commission on November 14, 2013.
- (c) Number of shares as to which such person has:
 - (i) Sole power to vote or to direct the vote: 0
 - (ii) Shared power to vote or to direct the vote: 1,251,526 shares for each of the Reporting Persons
 - (iii) Sole power to dispose or to direct the disposition of: 0
 - (iv) Shared power to dispose or to direct the disposition of: 1,251,526 for each of the Reporting Persons

Item 5. Ownership of Five Percent or Less of a Class.

Not applicable.

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Not applicable.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company.

Not applicable.

Item 8. Identification and Classification of Members of the Group.

The Reporting Persons are making this single, joint filing because they may be deemed to constitute a “group” within the meaning of Section 13(d)(3) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). The agreement among the Reporting Persons to file jointly in accordance with Rule 13d-1(k) of the Exchange Act is attached hereto as Exhibit 99.1. The Reporting Persons disclaim membership in a group and this report shall not be deemed an admission by any of the Reporting Persons that they are or may be members of a “group” for purposes of Rule 13d-5 or for any other purpose.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certification.

Not applicable.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: February 25, 2014

COÖPERATIEVE AAC LS U.A.

By: /s/ L.P.A. Bergstein

Name: L.P.A. Bergstein

Title: Director of Forbion 1 Management B.V.

By: /s/ Geert-Jan Mulder

Name: Geert-Jan Mulder

Title: Proxy Holder of Forbion 1 Management B.V.

FORBION 1 MANAGEMENT B.V.

By: /s/ L.P.A. Bergstein

Name: L.P.A. Bergstein

Title: Director

By: /s/ Geert-Jan Mulder

Name: Geert-Jan Mulder

Title: Proxy Holder

EXHIBIT INDEX

Exhibit 99.1 Joint Filing Agreement, as required by Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended.

JOINT FILING AGREEMENT PURSUANT TO RULE 13d-1(k)

The undersigned acknowledge and agree that the foregoing statement on Schedule 13G is filed on behalf of each of the undersigned and that all subsequent amendments to this statement on Schedule 13G shall be filed on behalf of each of the undersigned without the necessity of filing additional joint filing statements. The undersigned acknowledge that each shall be responsible for the timely filing of such amendments, and for the completeness and accuracy of the information concerning him, her or it contained herein, but shall not be responsible for the completeness and accuracy of the information concerning the other entities or persons, except to the extent that he, she or its knows or has reason to believe that such information is inaccurate.

Date: February 25, 2014

COÖPERATIEVE AAC LS U.A.

By: /s/ L.P.A. Bergstein

Name: L.P.A. Bergstein

Title: Director of Forbion 1 Management B.V.

By: /s/ Geert-Jan Mulder

Name: Geert-Jan Mulder

Title: Proxy Holder of Forbion 1 Management B.V.

FORBION 1 MANAGEMENT B.V.

By: /s/ L.P.A. Bergstein

Name: L.P.A. Bergstein

Title: Director

By: /s/ Geert-Jan Mulder

Name: Geert-Jan Mulder

Title: Proxy Holder