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

FORM 8-K

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

Date of Report (Date of Earliest Event Reported): May 26, 2015

bluebird bio, Inc.

(Exact name of registrant as specified in its charter)

DELAWARE

(State or other jurisdiction of
incorporation)

001-35966

(Commission File Number)

13-368088

(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)

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

On May 26, 2015, bluebird bio, Inc. (“bluebird”) and Five Prime Therapeutics, Inc. (“Five Prime”) issued a joint press release announcing that they have entered into an exclusive license agreement to research, develop, and commercialize chimeric antigen receptor (CAR) T cell therapies using Five Prime’s proprietary human antibodies to an undisclosed cancer target for hematologic malignancies and solid tumors. The full text of the press release regarding the announcement is filed as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Press release issued by bluebird bio, Inc. and Five Prime Therapeutics on May 26, 2015, furnished herewith.

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: May 26, 2015

bluebird bio, Inc.

By: /s/ Jason F. Cole

Jason F. Cole

Senior Vice President, General Counsel

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press release issued by bluebird bio, Inc. on May 26, 2015, furnished herewith.

bluebird bio and Five Prime Therapeutics Enter into License Agreement for Novel Antibodies to Develop Chimeric Antigen Receptor T Cell Therapy

CAMBRIDGE, Mass. and SOUTH SAN FRANCISCO, Calif. -- (BUSINESS WIRE)--May 26, 2015-- bluebird bio, Inc. (Nasdaq: BLUE) and Five Prime Therapeutics, Inc. (Nasdaq: FPRX) today announced that they have entered into an exclusive license agreement to research, develop and commercialize chimeric antigen receptor (CAR) T cell therapies using Five Prime's proprietary human antibodies to an undisclosed cancer target for hematologic malignancies and solid tumors.

Under the terms of the agreement, Five Prime will provide bluebird bio exclusive rights to its novel human antibodies to the target, and bluebird bio will leverage its proprietary lentiviral gene therapy platform and CAR T capabilities to develop CAR T therapies against the target. Financial terms of the agreement include a \$1.5 million upfront payment and subsequent milestone payments to Five Prime, which together could total over \$130 million per licensed product if certain development, regulatory, and commercial milestones are achieved. Five Prime is also eligible to receive tiered royalties on product sales. bluebird bio will conduct and fund clinical development as well as regulatory and commercial activities.

"CAR T cell therapies have emerged as a very promising approach for treating a number of cancers," said Lewis "Rusty" T. Williams, M.D., Ph.D., chief executive officer & president of Five Prime. "bluebird bio brings a wealth of knowledge in the area of gene therapy, a key component of building CAR T therapeutics. We are also impressed by bluebird bio's development and manufacturing infrastructure. We feel that bluebird bio is well positioned to succeed with converting Five Prime's human antibodies to CAR T cell products that can benefit patients, and we are pleased that our proprietary platform continues to demonstrate its versatility in the field of immuno-oncology."

"We are very pleased to enter into this agreement with Five Prime, a company with a track record of success in the characterization and development of therapeutic antibodies to extracellular proteins," said Jeffrey T. Walsh, chief operating officer of bluebird bio. "Five Prime's program offers a strategic fit to our research and will augment bluebird bio's growing pipeline of immuno-oncology research and preclinical programs."

About bluebird bio, Inc.

With its lentiviral-based gene therapy and gene editing capabilities, bluebird bio has built an integrated product platform with broad potential application to severe genetic diseases and T cell-based immunotherapy. bluebird bio's clinical programs include Lenti-D™, currently in a Phase 2/3 study, called the Starbeam Study, for the treatment of childhood cerebral adrenoleukodystrophy, and LentiGlobin®, currently in three clinical studies: a global Phase 1/2 study, called the Northstar Study, for the treatment of beta-thalassemia major; a single-center Phase 1/2 study in France (HGB-205) for the treatment of beta-thalassemia major or severe sickle cell disease; and a separate U.S. Phase 1 study for the treatment of sickle cell disease (HGB-206). bluebird bio also has a preclinical CAR T cancer immuno-oncology program in collaboration with Celgene Corporation, as well as discovery research programs utilizing megaTALs/homing endonuclease gene editing technologies.

bluebird bio has operations in Cambridge, Massachusetts, Seattle, Washington, and Paris, France. For more information, please visit www.bluebirdbio.com.

About Five Prime Therapeutics

Five Prime Therapeutics, Inc. discovers and develops innovative therapeutics to improve the lives of patients with serious diseases. Five Prime's comprehensive discovery platform, which encompasses virtually every medically relevant extracellular protein, positions it to explore pathways in cancer, inflammation and their intersection in immuno-oncology, an area with significant therapeutic potential and a growing focus of the company's R&D activities. Five Prime has entered into strategic collaborations with leading global pharmaceutical companies and has promising product candidates in clinical and late preclinical development. For more information, please visit www.fiveprime.com.

bluebird bio Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding the research, development and advancement of bluebird bio's product candidates and CAR T research program. Any forward-looking statements are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to, the risk that

bluebird bio's CAR-T research program for this target will be unsuccessful and not identify any viable product candidates, the risk of cessation or delay of any planned clinical studies and/or our development of our product candidates, the risk that our collaboration with Celgene will not continue or will not be successful, and the risk that any one or more of our product candidates will not be successfully developed and commercialized. For a discussion of other risks and uncertainties, and other important factors, any of which could cause our actual results to differ from those contained in the forward-looking statements, see the section entitled "Risk Factors" in our most recent annual report on Form 10-K, as well as discussions of potential risks, uncertainties, and other important factors in our subsequent filings with the Securities and Exchange Commission. All information in this press release is as of the date of the release, and bluebird bio undertakes no duty to update this information unless required by law.

Five Prime Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "may," "will," "expect," "plan," "anticipate," "estimate," "intend" and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements. These forward-looking statements are based on Five Prime's expectations and assumptions as of the date of this press release. Each of these forward-looking statements involves risks and uncertainties. Actual results may differ materially from these forward-looking statements. Forward-looking statements contained in this press release include statements regarding Five Prime's potential receipt of upfront and milestone payments and royalties. Factors that may cause actual results to differ from those expressed or implied in the forward-looking statements in this press release are discussed in Five Prime's filings with the U.S. Securities and Exchange Commission, including the "Risk Factors" contained therein. Except as required by law, Five Prime assumes no obligation to update any forward-looking statements contained herein to reflect any change in expectations, even as new information becomes available.

bluebird bio, Inc.

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