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

**FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

REGENXBIO INC.
(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2836
(Primary Standard Industrial
Classification Code Number)

47-1851754
(I.R.S. Employer
Identification No.)

**9712 Medical Center Drive, Suite 100
Rockville, MD 20850
(240) 552-8181**
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

**Kenneth T. Mills
Chief Executive Officer
REGENXBIO Inc.
9712 Medical Center Drive, Suite 100
Rockville, MD 20850
(240) 552-8181**
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Please send copies of all communications to:

**Jay K. Hachigian, Esq.
Richard R. Hesp, Esq.
Keith J. Scherer, Esq.
Albert W. Vanderlaan, Esq.
Gunderson Dettmer Stough
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**Sara Garon Berl, Esq.
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**Richard D. Truesdell, Jr., Esq.
Sophia Hudson, Esq.
Davis Polk & Wardwell LLP
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Telephone: (212) 450-4000**

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. 333-206430

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer,” and “smaller reporting company” in Rule 12b-2 of the Securities Exchange Act. (Check one):

Large accelerated filer Accelerated filer
 Non-accelerated filer (Do not check if a smaller reporting company) Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered ⁽¹⁾	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee ⁽²⁾
Common Stock, \$0.0001 par value	856,112	\$22.00	\$18,834,464	\$2,188.57

- (1) Represents only the additional number of shares being registered, including 111,667 additional shares that the underwriters have the option to purchase. Does not include the securities that the Registrant previously registered on the Registration Statement on Form S-1, as amended (File No. 333-206430).
- (2) Calculated in accordance with Rule 457(a) of the Securities Act of 1933 solely on the basis of \$22.00, the initial public offering price set forth on the cover page of the Registrant’s Prospectus dated September 16, 2015 relating to its initial public offering pursuant to the Company’s Registration Statement on Form S-1 (File No. 333-206430).

This Registration Statement shall become effective upon filing in accordance with Rule 462(b) under the Securities Act.

EXPLANATORY NOTE AND INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

Pursuant to Rule 462(b) under the Securities Act of 1933, as amended (“**Securities Act**”), REGENXBIO Inc. (“**Registrant**”) is filing this Registration Statement on Form S-1 (this “**Registration Statement**”) with the Securities and Exchange Commission (“**Commission**”). This Registration Statement relates to the public offering of securities contemplated by the Registration Statement on Form S-1, as amended (File No. 333-206430) (the “**Prior Registration Statement**”), which the Registrant originally filed with the Commission on August 17, 2015, and which the Commission declared effective on September 16, 2015.

The Registrant is filing this Registration Statement for the sole purpose of increasing the aggregate number of shares of common stock offered by the Registrant by 856,112 shares, 111,667 of which are subject to purchase upon the exercise of the underwriters’ option to purchase additional shares of the Registrant’s common stock. The additional shares that are being registered for sale are in an amount and at a price that together represent no more than 20% of the maximum aggregate offering price set forth in the Calculation of Registration Fee table contained in the Prior Registration Statement. The information set forth in the Prior Registration Statement and all exhibits to the Prior Registration Statement are incorporated by reference into this Registration Statement.

The required opinions and consents are listed on the Exhibit Index attached hereto and filed herewith.

UNDERTAKING

The Company hereby certifies to the Commission that (i) it has instructed its bank to pay the commission the filing fee set forth in the cover page of this registration statement by wire transfer of such amount to the Commission’s account at U.S. Bank as soon as practicable (but no later than the close of business on September 17, 2015); (ii) it will not revoke such instruction; (iii) it has sufficient funds in the relevant account to cover the amount of such filing fee; and (iv) it will confirm receipt of such instructions by its bank during the bank’s regular business hours no later than September 17, 2015.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Rockville, State of Maryland, on this 16th day of September, 2015.

REGENXBIO INC.

By: /s/ Kenneth T. Mills
Kenneth T. Mills
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Kenneth T. Mills</u> Kenneth T. Mills	Chief Executive Officer, President and Director (Principal Executive Officer)	September 16, 2015
<u>/s/ Vittal Vasista</u> Vittal Vasista	Chief Financial Officer (Principal Financial and Accounting Officer)	September 16, 2015
<u>*</u> Donald J. Hayden, Jr.	Chairman of the Board of Directors	September 16, 2015
<u>*</u> Luke M. Beshar	Director	September 16, 2015
<u>*</u> Edgar G. Engleman, M.D.	Director	September 16, 2015
<u>*</u> Allan M. Fox	Director	September 16, 2015
<u>*</u> A.N. "Jerry" Karabelas, Ph.D.	Director	September 16, 2015
<u>*</u> Camille Samuels	Director	September 16, 2015

*By: /s/ Kenneth T. Mills
Kenneth T. Mills
Attorney-in-Fact

EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Description</u>
5.1	Opinion of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP.
23.1	Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP (included in Exhibit 5.1).
23.2	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.
24.1	Power of Attorney (incorporated by reference to signature page to the Registration Statement on Form S-1 (Registration No. 333-206430)).

September 16, 2015

REGENXBIO Inc.
9712 Medical Center Drive, 1st Floor
Rockville, MD 20850

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the sale by REGENXBIO Inc., a Delaware corporation (the "**Company**"), of an additional 856,112 shares of the Company's Common Stock (the "**Additional Shares**") for an aggregate offering size of up to 7,245,000 shares of the Company's Common Stock, including an option granted by the Company to the underwriters to purchase up to 945,000 additional shares of the Company's Common Stock, pursuant to the Registration Statement on Form S-1 to which this letter is attached as Exhibit 5.1 (the "**Rule 462(b) Registration Statement**") filed with the Securities and Exchange Commission (the "**Commission**") pursuant to Rule 462(b) promulgated under the Securities Act of 1933, as amended (the "**Act**"). The Rule 462(b) Registration Statement to be used for the offer and sale of the Additional Shares is filed with the Commission in connection with the offering described in the Registration Statement on Form S-1 (Registration No. 333-206430) initially filed with the Commission on August 17, 2015, as amended, which was declared effective by the Commission on September 16, 2015 (the "**Original Registration Statement**" and collectively with the Rule 462(b) Registration Statement, the "**Registration Statements**"). We understand that the Additional Shares are to be sold to the underwriters for resale to the public as described in the Original Registration Statement and pursuant to an underwriting agreement, substantially in the form filed as an exhibit to the Original Registration Statement, to be entered into by and among the Company and the underwriters (the "**Underwriting Agreement**").

In connection with this opinion, we have examined and relied upon the Registration Statements and the originals or copies certified to our satisfaction of such other documents, records, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. With your consent, we have relied upon certificates and other assurances of officers of the Company as to factual matters without having independently verified such factual matters. We have assumed the genuineness and authenticity of all documents submitted to us as originals, and the conformity to originals of all documents submitted to us as copies thereof and the due execution and delivery by all parties other than the Company of all documents where due execution and delivery are a prerequisite to the effectiveness thereof.

This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement, other than as expressly stated herein with respect to the issue of the Additional Shares. Our opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. Our opinion herein is expressed solely with respect to the General Corporation Law of the State of Delaware and we express no opinion with respect to any other laws. Our opinion is based on these laws as in effect on the date hereof, and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, when the Additional Shares to be issued and sold by the Company are issued and paid for in accordance with the terms of the Underwriting Agreement, such Additional Shares will be validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Rule 462(b) Registration Statement, and further consent to the use of our name wherever appearing in said Rule 462(b) Registration Statement and in any amendment or supplement thereto. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Sincerely,

/s/ Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-1 of our report dated July 1, 2015 relating to the financial statements of REGENXBIO Inc., which appears in Amendment No. 3 to the Registration Statement on Form S-1 (No. 333-206430). We also consent to the reference to us under the heading "Experts" in Amendment No. 3 to the Registration Statement on Form S-1 (No. 333-206430).

/s/ PricewaterhouseCoopers LLP

McLean, VA
September 16, 2015