

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

**FORM S-8
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)
9600 Blackwell Road, Suite 210
Rockville, Maryland
(Address of Principal Executive Offices)

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

22201
(Zip Code)

2015 Equity Incentive Plan
(Full title of the plan)

Vittal Vasista
Chief Financial Officer
REGENXBIO Inc.

9600 Blackwell Road, Suite 210
Rockville, Maryland 20850
(Name and address of agent for service)

(240) 552-8181

(Telephone number, including area code, of agent for service)

Copies to:

Jay K. Hachigian, Esq.
Keith Scherer, Esq.
Albert W. Vanderlaan, Esq.
Gunderson Dettmer Stough
Villeneuve Franklin & Hachigian, LLP
One Marina Park Drive, Suite 900
Boston, Massachusetts 02210
(617) 648-9100

Patrick J. Christmas, Esq.
Senior Vice President, General Counsel
REGENXBIO Inc.
9600 Blackwell Road, Suite 210
Rockville, Maryland 20850
(240) 552-8181

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 Exchange Act.

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 securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share(2)	Proposed maximum aggregate offering price(2)	Amount of registration fee
Common Stock, \$0.0001 par value per share (2015 Equity Incentive Plan)	1,059,065	\$18.38	\$19,465,614.70	\$2,256.06

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover any additional shares of the Registrant's Common Stock that become issuable in respect of the securities identified in the above table by reason of any stock dividend, stock split, recapitalization or other similar transaction.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) and Rule 457(h) under the Securities Act, and based upon the average of the high and low prices of the Registrant's Common Stock as reported on The NASDAQ Global Select Market on February 28, 2017.

EXPLANATORY NOTE

Pursuant to General Instruction E to Form S-8 under the Securities Act of 1933, as amended, this Registration Statement is filed by REGENXBIO Inc. (the “Company”) for the purpose of registering additional shares of Common Stock under the Company’s 2015 Equity Incentive Plan (the “Plan”).

The number of shares of Common Stock available for issuance under the Plan is subject to an automatic annual increase as of the first business day of the Company’s fiscal year equal to the lower of (a) 4.0% of the total number of shares of Common Stock outstanding on December 31 of the prior year or (b) a number of shares of Common Stock determined by the Company’s Board of Directors (the “Evergreen Provision”). Accordingly, the number of shares of Common Stock available for issuance under the Plan was increased by 1,059,065 shares effective January 3, 2017. This Registration Statement registers the 1,059,065 additional shares of Common Stock available for issuance under the Plan as a result of the Evergreen Provision.

Of the 5,063,703 shares of Common Stock currently authorized by the Plan, (a) 2,952,100 shares of Common Stock were registered pursuant to the Company’s Registration Statement on Form S-8 filed on September 17, 2015 (Commission File No. 333-206984) and (b) 1,052,538 shares of Common Stock were registered pursuant to the Company’s Registration Statement on Form S-8 filed on March 3, 2016 (Commission File No. 333-209899) (collectively, the “Original Registration Statements”). The contents of the Original Registration Statements, including any amendments thereto or filings incorporated therein by reference are incorporated herein by reference and made part of this Registration Statement. Any items in the Original Registration Statements not expressly changed hereby shall be as set forth in the Original Registration Statements.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 8. Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
5.1	Opinion and Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP.
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP (contained in Exhibit 5.1).
24.1	Power of Attorney (contained on signature page hereto).

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and 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 7th day of March, 2017.

REGENXBIO INC.

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

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Kenneth T. Mills and Patrick J. Christmas, and each of them, as his or her true and lawful attorney-in-fact and agent with full power of substitution, for him or her in any and all capacities, to sign any and all amendments to this Registration Statement on Form S-8 (including post-effective amendments), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute, may lawfully do or cause to be done by virtue hereof.

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	President, Chief Executive Officer and Director (Principal Executive Officer)	March 7, 2017
<u>/s/ Vittal Vasista</u> Vittal Vasista	Chief Financial Officer (Principal Financial and Accounting Officer)	March 7, 2017
<u>/s/ Donald J. Hayden, Jr.</u> Donald J. Hayden, Jr.	Chairman of the Board of Directors	March 7, 2017
<u>/s/ Daniel J. Abdun-Nabi</u> Daniel J. Abdun-Nabi	Director	March 7, 2017
<u>/s/ Luke M. Beshar</u> Luke M. Beshar	Director	March 7, 2017
<u>/s/ Allan M. Fox</u> Allan M. Fox	Director	March 7, 2017
<u>/s/ A.N. "Jerry" Karabelas</u> A.N. "Jerry" Karabelas	Director	March 7, 2017
<u>/s/ David C. Stump</u> David C. Stump	Director	March 7, 2017
<u>/s/ Daniel Tassé</u> Daniel Tassé	Director	March 7, 2017

EXHIBIT INDEX

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24.1	Power of Attorney (contained on signature page hereto).

March 7, 2017

REGENXBIO Inc.
9712 Medical Center Drive, Suite 100
Rockville, Maryland 20850

Ladies and Gentlemen:

We refer to the registration statement on Form S-8 (the "Registration Statement") to be filed by REGENXBIO Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") in connection with the registration under the Securities Act of 1933, as amended (the "Act"), of an aggregate of up to 1,059,065 shares of the Company's common stock, \$0.0001 par value ("Common Stock") reserved for issuance under the Company's 2015 Equity Incentive Plan (the "Plan").

In connection with this opinion, we have reviewed the actions proposed to be taken by you in connection with the issuance and sale of the Common Stock to be issued under the Plan. We have also examined and relied upon the Registration Statement 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 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 Common Stock. 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 federal laws of the United States and the General Corporation Law of the State of Delaware. 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. We are not rendering any opinion as to compliance with any federal or state antifraud law, rule or regulation relating to securities, or to the sale or issuance thereof.

Based upon and subject to the foregoing, we advise you that, in our opinion, when the Common Stock has been issued and sold by the Company pursuant to the applicable provisions of the Plan and pursuant to the agreements which accompany the Plan, and in accordance with the Registration Statement, such Common Stock will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. 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.

Very truly yours,

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

Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 7, 2017 relating to the financial statements, which appears in REGENXBIO Inc.'s Annual Report on Form 10-K for the year ended December 31, 2016.

/s/ PricewaterhouseCoopers LLP
McLean, Virginia
March 7, 2017