March 07, 2017				
As filed with the Securities an	d Exchange Commission on March 7, 2	017		
Registration No. 333-				
UNITED STATES				
SECURITIES AND EXCHA	NGE COMMISSION			
Washington, D.C. 20549				
FORM S-8				
REGISTRATION STATEME	ENT			
UNDER				
THE SECURITIES ACT OF	1933			
REGENXBIO Inc.				
(Exact name of registrant as specified in its charter)				
	Delaware State or other jurisdiction of	47-1851754 (I.R.S. Employer		
ir	ncorporation or organization)	Identification No.)		
9	600 Blackwell Road, Suite 210			
	Rockville, Maryland Address of Principal Executive Offices)	22201 (Zip Code)		

REGENXBIO Inc.

Form S-8

(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. Patrick J. Christmas, Esq.

Keith Scherer, Esq. Senior Vice President, General Counsel

Albert W. Vanderlaan, Esq. REGENXBIO Inc.

Gunderson Dettmer Stough 9600 Blackwell Road, Suite 210 Villeneuve Franklin & Hachigian, LLP Rockville, Maryland 20850

One Marina Park Drive, Suite 900 (240) 552-8181

Boston, Massachusetts 02210

(617) 648-9100

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

	Amount to be	Proposed maximum offering price per	Proposed maximum	Amount of registration
Title of securities to be register	redregistered(1)	share(2)	aggregate offering price(2)	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.

Exhibit No. Description

- 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.

Signature Title Date

/s/ Kenneth T. Mills President, Chief Executive Officer and Director March 7, 2017

Kenneth T. Mills (Principal Executive Officer)

/s/ Vittal Vasista Chief Financial Officer March 7, 2017

Vittal Vasista (Principal Financial and Accounting Officer)

/s/ Donald J. Hayden, Jr. Chairman of the Board of Directors March 7, 2017

Donald J. Hayden, Jr.

/s/ Daniel J. Abdun-Nabi	Director	March 7, 2017		
Daniel J. Abdun-Nabi				
/s/ Luke M. Beshar Luke M. Beshar	Director	March 7, 2017		
/s/ Allan M. Fox Allan M. Fox	Director	March 7, 2017		
/s/ A.N. "Jerry" Karabela A.N. "Jerry" Karabelas	s Director	March 7, 2017		
/s/ David C. Stump David C. Stump	Director	March 7, 2017		
/s/ Daniel Tassé Daniel Tassé	Director	March 7, 2017		

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