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

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**FORM S-8**  
**REGISTRATION STATEMENT**  
*UNDER*  
*THE SECURITIES ACT OF 1933*

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**Regulus Therapeutics Inc.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**26-4738379**  
(I.R.S. Employer  
Identification No.)

**10614 Science Center Drive**  
**San Diego, CA**  
(Address of Principal Executive Offices)

**92121**  
(Zip Code)

**2012 Equity Incentive Plan**  
**2012 Employee Stock Purchase Plan**  
(Full titles of the plans)

**Joseph P. Hagan**  
**President and Chief Executive Officer**  
**Regulus Therapeutics Inc.**  
**10614 Science Center Drive**  
**San Diego, CA 92121**  
**(858) 202-6300**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*

**Thomas A. Coll, Esq.**  
**Kenneth J. Rollins, Esq.**  
**Cooley LLP**  
**4401 Eastgate Mall**  
**San Diego, California 92121**  
**Tel: (858) 550-6000**

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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. (Check one):

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Exchange Act.

#### 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
<b>2012 Equity Incentive Plan</b>				
Common Stock, \$0.001 par value per share	4,158,205(3)	\$1.025	\$4,262,160.13	\$530.64
<b>2012 Employee Stock Purchase Plan</b>				
Common Stock, \$0.001 par value per share	500,000(4)	\$1.025	\$512,500.00	\$63.81
<b>Total</b>	<b>4,658,205</b>	<b>N/A</b>	<b>\$4,774,660.13</b>	<b>\$594.45</b>

- (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 (“Common Stock”) that become issuable under the plans by reason of any stock dividend, stock split, recapitalization or other similar transaction.
- (2) This estimate is made pursuant to Rule 457(h)(1) and Rule 457(c) of the Securities Act solely for purposes of calculating the registration fee. The price per share and aggregate offering price are based upon the average of the high and low prices of the Common Stock on December 28, 2017, as reported on the Nasdaq Stock Market.
- (3) Represents shares of Common Stock that were automatically added to the shares authorized for issuance under the Regulus Therapeutics Inc. 2012 Equity Incentive Plan (the “2012 EIP”) on January 1, 2018 pursuant to an “evergreen” provision contained in the 2012 EIP. Pursuant to such provision, on January 1<sup>st</sup> of each year from 2013 until 2022, the number of shares authorized for issuance under the 2012 EIP is automatically increased by: (a) a number equal to 4% of the total number of shares of Common Stock outstanding on December 31<sup>st</sup> of the preceding calendar year; or (b) a number determined by the Registrant’s board of directors that is less than the amount set forth in the foregoing clause (a).
- (4) Represents shares of Common Stock that were automatically added to the shares authorized for issuance under the Regulus Therapeutics Inc. 2012 Employee Stock Purchase Plan (the “2012 ESPP”) on January 1, 2018 pursuant to an “evergreen” provision contained in the 2012 ESPP. Pursuant to such provision, on January 1<sup>st</sup> of each year from 2013 until 2022, the number of shares authorized for issuance under the 2012 ESPP is automatically increased by a number equal to the least of: (a) 1% of the total number of shares of Common Stock outstanding on December 31<sup>st</sup> of the preceding calendar year; (b) 500,000 shares of Common Stock; and (c) a number determined by the Registrant’s board of directors that is less than the amounts set forth in the foregoing clauses (a) and (b).

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**INCORPORATION OF DOCUMENTS BY REFERENCE.**

This Registration Statement is being filed for the purpose of increasing the number of securities of the same class as other securities for which Registration Statements of the Registrant on Form S-8 relating to the same employee benefit plans are effective.

The Registrant previously registered shares of its Common Stock for issuance under the 2012 EIP and the 2012 ESPP under Registration Statements on Form S-8 filed with the Securities and Exchange Commission (the "Commission") on October 5, 2012 (File No. 333-184324), May 15, 2013 (File No. 333-188606), March 4, 2014 (File No. 333-194294), February 9, 2015 (File No. 333-201988), February 23, 2016 (File No. 333-209654) and January 27, 2017 (File No. 333-215793). Pursuant to General Instruction E to Form S-8, this Registration Statement hereby incorporates by reference the contents of the Registration Statements referenced above.

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## EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Description</u>
4.1	<a href="#"><u>Amended and Restated Certificate of Incorporation of the Registrant (previously filed as Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q, filed with the Commission on August 3, 2016, and incorporated herein by reference).</u></a>
4.2	<a href="#"><u>Amended and Restated Bylaws of the Registrant (previously filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed with the Commission on June 8, 2016, and incorporated herein by reference).</u></a>
4.3	<a href="#"><u>Form of Common Stock Certificate of the Registrant (previously filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (File No. 333-183384), originally filed with the Commission on August 17, 2012, as amended, and incorporated herein by reference).</u></a>
5.1	<a href="#"><u>Opinion of Cooley LLP.</u></a>
23.1	<a href="#"><u>Consent of Independent Registered Public Accounting Firm.</u></a>
23.2	<a href="#"><u>Consent of Cooley LLP. Reference is made to Exhibit 5.1.</u></a>
24.1	<a href="#"><u>Power of Attorney. Reference is made to the signature page hereto.</u></a>
99.1	<a href="#"><u>2012 Equity Incentive Plan and Form of Stock Option Agreement and Form of Stock Option Grant Notice thereunder (previously filed as Exhibit 10.3 to the Registrant's Registration Statement on Form S-1 (File No. 333-183384), originally filed with the Commission on August 17, 2012, as amended, and incorporated herein by reference).</u></a>
99.2	<a href="#"><u>2012 Employee Stock Purchase Plan (Previously filed as Exhibit 10.5 to the Registrant's Registration Statement on Form S-1 (File No. 333-183384), originally filed with the Commission on August 17, 2012, as amended, and incorporated herein by reference).</u></a>

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## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 San Diego, State of California, on January 5, 2018.

### REGULUS THERAPEUTICS INC.

By: /s/ Joseph P. Hagan  
Joseph P. Hagan  
President and Chief Executive Officer

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Joseph P. Hagan as his true and lawful attorney-in-fact and agent, with full power of substitution, for him and in his name, place or stead, in any and all capacities, to sign any and all amendments to this Registration Statement (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 to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent or his substitute may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, 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/ Joseph P. Hagan</u> Joseph P. Hagan	President, Chief Executive Officer and Member of the Board of Directors <i>(Principal Executive Officer)</i>	January 5, 2018
<u>/s/ Daniel R. Chevallard</u> Daniel R. Chevallard	Chief Financial Officer <i>(Principal Financial and Accounting Officer)</i>	January 5, 2018
<u>/s/ Stelios Papadopoulos, Ph.D.</u> Stelios Papadopoulos, Ph.D.	Chairman of the Board and Member of the Board of Directors	January 5, 2018
<u>/s/ David Baltimore, Ph.D.</u> David Baltimore, Ph.D.	Member of the Board of Directors	January 5, 2018
<u>/s/ Mark G. Foletta</u> Mark G. Foletta	Member of the Board of Directors	January 5, 2018
<u>/s/ William H. Rastetter, Ph.D.</u> William H. Rastetter, Ph.D.	Member of the Board of Directors	January 5, 2018
<u>/s/ Hugh Rosen, M.D., Ph.D.</u> Hugh Rosen, M.D., Ph.D.	Member of the Board of Directors	January 5, 2018
<u>/s/ Pascale Witz</u> Pascale Witz	Member of the Board of Directors	January 5, 2018



Kenneth J. Rollins  
+1 858 550 6136  
krollins@cooley.com

January 5, 2018

Regulus Therapeutics Inc.  
10614 Science Center Drive  
San Diego, CA 92121

Ladies and Gentlemen:

We have represented Regulus Therapeutics Inc., a Delaware corporation (the "**Company**"), in connection with the filing by the Company of a Registration Statement on Form S-8 (the "**Registration Statement**") with the Securities and Exchange Commission, covering the offering of up to an aggregate of 4,658,205 shares of the Company's Common Stock, \$0.001 par value (the "**Shares**"), including (i) 4,158,205 shares (the "**2012 Plan Shares**") reserved for issuance pursuant to the Company's 2012 Equity Incentive Plan (the "**2012 Plan**"), and (ii) 500,000 shares (the "**ESPP Shares**") reserved for issuance pursuant to the Company's 2012 Employee Stock Purchase Plan (the "**2012 ESPP**").

In connection with this opinion, we have examined and relied upon the Registration Statement and the related prospectuses, the 2012 Plan and the 2012 ESPP, the Company's Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws and 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. 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.

Our opinion is expressed only with respect to the federal laws of the United States of America and the General Corporation Law of the State of Delaware.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the 2012 Plan Shares, when sold and issued in accordance with the 2012 Plan and applicable stock option agreement, and the ESPP Shares, when sold and issued in accordance with the 2012 ESPP, and in each case when sold and issued in accordance with the Registration Statement and related prospectuses, will be validly issued, fully paid, and nonassessable (except as to shares issued pursuant to certain deferred payment arrangements, which will be fully paid and nonassessable when such deferred payments are made in full).

Cooley LLP 4401 Eastgate Mall San Diego, CA 92121  
t: (858) 550-6000 f: (858) 550-6420 cooley.com



January 5, 2018  
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We consent to the filing of this opinion as an exhibit to the Registration Statement.

Sincerely,

Cooley LLP

By: /s/ Kenneth J. Rollins  
Kenneth J. Rollins

Cooley LLP 4401 Eastgate Mall San Diego, CA 92121  
t: (858) 550-6000 f: (858) 550-6420 cooley.com

**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the 2012 Equity Incentive Plan and the 2012 Employee Stock Purchase Plan of Regulus Therapeutics Inc. of our report dated March 2, 2017, with respect to the financial statements of Regulus Therapeutics Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2016, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

San Diego, California  
January 5, 2018