Registration No. 333-

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

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

CALADRIUS BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)

22-2343568 (I.R.S. employer identification number)

106 Allen Road, 4th Floor Basking Ridge, NJ 09720

(Address of principal executive offices; zip code)

Caladrius Biosciences, Inc. 2017 Employee Stock Purchase Plan (Full title of the plans)

> Todd C. Girolamo, Esq. General Counsel Caladrius Biosciences, Inc. 420 Lexington Avenue, Suite 350 New York, NY 10170 (212) 584-4180

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

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 o Accelerated filer o Smaller reporting company 🛛 (Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

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 13(a) of the Exchange Act.

Title of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price per Share (2)	Proposed Maximum Aggregate Offering Price (2)	Amount of Registration Fee
Common Stock, par value \$0.001 per share:	50,000 shares (1)	\$4.61	\$230,500	\$26.71

- (1) The number of shares of Caladrius Biosciences, Inc. (the "Company") common stock, par value \$0.001 per share (the "Common Stock") stated above consists of the aggregate number of additional shares not previously registered which may be issued and sold pursuant to the Caladrius Biosciences, Inc. 2017 Employee Stock Purchase Plan (the "2017 Plan"). In accordance with Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement also covers such indeterminate number of additional shares as may be offered and issued under the 2017 Plan to prevent dilution resulting from any equity restructuring or change in capitalization of the registrant, including, but not limited to, spin offs, stock dividends, large non-recurring dividends, rights offerings, stock splits or similar transactions.
- (2) Estimated, in accordance with Rule 457(c) and Rule 457(h)(1) of the Securities Act, solely for the purpose of calculating the registration fee. The proposed maximum offering price per share and the proposed maximum aggregate offering price are based on the average of the high and low prices for a share of Common Stock on the NASDAQ Capital Market on June 5, 2017, which is within five business days prior to the date of this registration statement.

Caladrius Biosciences, Inc. 2017 Employee Stock Purchase Plan

Caladrius Biosciences, Inc. (the "Company" or the "Registrant") is hereby registering 50,000 shares of the Company's common stock, par value \$0.001 per share ("Common Stock"), which may be issued and sold pursuant to the Caladrius Biosciences, Inc. 2017 Employee Stock Purchase Plan (the "2017 Plan"). On May 16, 2017, the Company's stockholders approved the 2017 Plan as an amendment and restatement of the NeoStem, Inc. 2012 Employee Stock Purchase Plan (the "2012 Plan") to, among other things, (a) increase the maximum number of shares that employees may purchase from 50,000 to 100,000, (b) extend the term of the plan by ten years so that it expires in 2027 rather than in 2021, (c) change the name of the plan to reflect the Company's name change from "NeoStem, Inc." to "Caladrius Biosciences, Inc." and (d) improve the plan's provisions relating to data privacy and claims procedures. The Company has previously registered on Form S-8 (Registration No. 333-184927) an aggregate of 50,000 shares of Common Stock issuable under the 2012 Plan.

PART I INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The information required to be contained in the Section 10(a) prospectus is omitted from this registration statement and will be provided to participants in the Caladrius Biosciences, Inc. 2017 Employee Stock Purchase Plan (the "2017 Plan") pursuant to Rule 428 of the Securities Act of 1933, as amended (the "Securities Act").

IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Certain Documents by Reference.

The following documents filed by the Registrant with the Securities and Exchange Commission (the "SEC") are incorporated herein by reference:

- (a) Our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the Securities and Exchange Commission on March 17, 2017.
- (b) Our Definitive Proxy Statement on Schedule 14A for our 2017 Annual Meeting of Stockholders, filed with the Securities and Exchange Commission on April 11, 2017.
- (c) Our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2017, filed with the Securities and Exchange Commission on May 15, 2017.
- (d) Our Current Reports on Form 8-K and amendments thereto, filed with the Securities and Exchange Commission on January 6, 2017, March 17, 2017 (three reports), March 22, 2017, March 23, 2017, March 30, 2017, May 17, 2017 (two reports) and May 18, 2017 (excluding any information deemed furnished pursuant to Item 2.02 or Item 7.01 of any such Current Report on Form 8-K).
- (e) Description of our Common Stock contained in our Registration Statement on Form 8-A, declared effective on August 2, 2013 (including any amendment or report filed with the Securities and Exchange Commission for the purpose of updating such description).

All documents subsequently filed by us with the Securities and Exchange Commission pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the filing of a post-effective amendment to this registration statement, which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be a part hereof from the date of filing of such documents.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

The validity of the issuance of the shares of Common Stock registered under this Registration Statement has been passed upon for the Registrant by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. A member of that firm owns 1,000 shares of Common Stock of the Registrant.

Item 6. Indemnification of Directors and Officers.

The Registrant is incorporated under the laws of the State of Delaware. Under the General Corporation Law of the State of Delaware (the "Delaware GCL"), a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), by reason of the fact that he or she is or was the Registrant's director, officer, employee or agent, or is or was serving at the Registrant's request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the Registrant's best interests, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

In addition, the Delaware GCL also provides that the Registrant also may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the Registrant's right to procure a judgment in its favor by reason of the fact that he or she is or was the Registrant's director, officer, employee or agent, or is or was serving at the Registrant's request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by him or her in connection with the defense or settlement of such action or suit if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the Registrant's best interests. However, in such an action by or on the Registrant's behalf, no indemnification may be made in respect of any claim, issue or matter as to which the person is adjudged liable to the Registrant unless and only to the extent that the court determines that, despite the adjudication of liability but in view of all the circumstances, the person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper.

The Registrant's certificate of incorporation is consistent with the Delaware GCL. Each of the Registrant's directors, officers, employees and agents will be indemnified to the extent permitted by the Delaware GCL. The Registrant also maintains insurance on behalf of its directors and officers against liabilities asserted against such persons and incurred by such persons in such capacities, whether or not the Registrant would have the power to indemnify such persons under the Delaware GCL.

The Registrant has entered into indemnification agreements with its Chief Executive Officer and Chief Financial Officer, and certain other employees and each of the Registrant's directors pursuant to which the Registrant has agreed to indemnify such party to the full extent permitted by law, subject to certain exceptions, if such party becomes subject to an action because such party is the Registrant's director, officer, employee, agent or fiduciary.

In addition to such other rights of indemnification as they may have, the 2017 Plan contains the following indemnification provision applicable to (i) each member of the Board of Directors of the Company and (ii) each member of the committee which administers the 2017 Plan (the "Committee"), defined as the Compensation Committee of the Board of Directors, or such other committee of members of the Board appointed by the Board, authorized under Section 14 of the 2017 Plan to administer the 2017 Plan and to perform the functions assigned to the Committee under such 2017 Plan:

"The Plan shall be administered by the Committee. The Committee shall have full and exclusive discretionary authority to construe, interpret and apply the terms of the Plan, to determine eligibility and to adjudicate all disputed claims filed under the Plan. Every finding, decision and determination made by the Committee shall, to the full extent permitted by law, be final and binding upon all parties. The Committee may retain the services of an outside firm to serve as its agent in administering the Plan on a day-to-day basis. No member of the Board or the Committee shall be liable for any act done or omitted to be done by such member or by any other member of the Board or the Committee in connection with the Plan, except for such member's own willful misconduct or as expressly provided by statute."

Item 7. Exemption From Registration Claimed.

Not applicable.

Item 8. Exhibits.

The exhibits accompanying this registration statement are listed on the accompanying exhibit index.

Item 9. Undertakings.

- (a) The undersigned Registrant hereby undertakes:
 - (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:
 - (i) To include any prospectus required by section 10(a)(3) of the Securities Act;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of

prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) promulgated under the Securities Act if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in this Registration Statement.

Provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Securities and Exchange Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in this Registration Statement.

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (b) The Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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 Basking Ridge, State of New Jersey, on June 9, 2017.

CALADRIUS BIOSCIENCES, INC.

By: /s/ David J. Mazzo

David J. Mazzo, PhD President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below under the heading "Name" constitutes and appoints David J. Mazzo and Joseph Talamo or either of them, his true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities to sign any and all amendments (including post-effective amendments) to this registration statement and any related registration statement filed under Rule 462(b), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully for all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, each acting alone, or his substitute or substitutes, 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>	Title	<u>Date</u>
<u>/s/ David J. Mazzo</u> David J. Mazzo, PhD	Director, President and Chief Executive Officer (Principal Executive Officer)	June 9, 2017
<u>/s/ Joseph Talamo</u> Joseph Talamo	Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	June 9, 2017
<u>/s/ Gregory B. Brown</u> Gregory B. Brown, MD	Chair of the Board of Directors	June 9, 2017
<u>/s/ Steven M. Klosk</u> Steven M. Klosk	Director	June 9, 2017
<u>/s/ Steven S. Myers</u> Steven S. Myers	Director	June 9, 2017
<u>/s/ Peter Traber</u> Peter Traber, MD	Director	June 9, 2017

EXHIBIT INDEX

Exhibit <u>Number</u> <u>Description</u>

- 4.1⁽¹⁾ Amended and Restated Certificate of Incorporation, as amended, of the Registrant
- 4.2⁽²⁾ Amended and Restated By-Laws, as amended, of the Registrant
- 5.1 Opinion of Mintz, Levin, Cohen, Ferris, Glovsky and Popeo, P.C.*
- 23.1 Consent of Mintz, Levin, Cohen, Ferris, Glovsky and Popeo, P.C. (included in Exhibit 5.1)*
- 23.2 Consent of Grant Thornton LLP*
- 24.1 Power of Attorney (included on the signature page of this registration statement)*
- 99.1⁽³⁾ Caladrius Biosciences, Inc. 2017 Employee Stock Purchase Plan
- * Filed herewith.
 - (1) Previously filed with the Securities and Exchange Commission on August 9, 2016 as Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 and incorporated herein by reference.
 - (2) Previously filed with the Securities and Exchange Commission on August 9, 2016 as Exhibit 3.2 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 and incorporated herein by reference.
 - (3) Previously filed with the Securities and Exchange Commission on April 11, 2017 as Annex C to the Registrant's Definitive Proxy Statement on Schedule 14A and incorporated herein by reference.

MINTZ LEVIN

Exhibit 5.1

Chrysler Center 666 Third Avenue New York, NY 10017 212-935-3000 212-983-3115 fax www.mintz.com

June 9, 2017

Caladrius Biosciences, Inc. 106 Allen Road, Fourth Floor Basking Ridge, New Jersey 07920

Ladies and Gentlemen:

We have acted as counsel to Caladrius Biosciences, Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing with the Securities and Exchange Commission of a Registration Statement on Form S-8 (the "Registration Statement"), pursuant to which the Company is registering the issuance under the Securities Act of 1933, as amended, of a total of 50,000 shares (the "Shares") of its common stock, \$0.001 par value per share (the "Common Stock"). This opinion is being rendered in connection with the filing of the Registration Statement. All capitalized terms used herein and not otherwise defined shall have the respective meanings given to them in the Registration Statement.

In connection with this opinion, we have examined the Company's Amended and Restated Certificate of Incorporation, as amended, and Amended and Restated By-Laws, as amended, both as currently in effect; such other records of the corporate proceedings of the Company and certificates of the Company's officers as we have deemed relevant; and the Registration Statement and the exhibits thereto.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified or photostatic copies and the authenticity of the originals of such copies.

Based upon the foregoing, we are of the opinion that (i) the Shares have been duly and validly authorized by the Company and (ii) the Shares, when sold, will have been duly and validly issued, fully paid and non-assessable shares of the Common Stock, free of preemptive rights.

Our opinion is limited to the applicable provisions of the Delaware Constitution, the General Corporation Laws of the State of Delaware and the reported judicial decisions interpreting those laws, and we express no opinion with respect to the laws of any other jurisdiction. No opinion is expressed herein with respect to the qualification of the Shares under the securities or blue sky laws of any state or any foreign jurisdiction.

We understand that you wish to file this opinion as an exhibit to the Registration Statement, and we hereby consent thereto.

Very truly yours,

/s/ Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated March 16, 2017 with respect to the consolidated financial statements of Caladrius Biosciences, Inc. included in the Annual Report on Form 10-K for the year ended December 31, 2016, which are incorporated by reference in this Registration Statement. We consent to the incorporation by reference of the aforementioned report in this Registration Statement.

/s/ GRANT THORNTON LLP

New York, New York June 9, 2017