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

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

CATALYST BIOSCIENCES, INC.

(Exact name of Registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)

56-2020050 (I.R.S. Employer Identification No.)

260 Littlefield Avenue South San Francisco, CA 94080 (Address of Principal Executive Offices)

CATALYST BIOSCIENCES, INC.

2015 STOCK INCENTIVE PLAN (Full title of the plan)

Nassim Usman, Ph.D. **President and Chief Executive Officer Catalyst Biosciences, Inc.** 260 Littlefield Avenue South San Francisco, CA 94080 (Name and address of agent for service)

(650) 871-0761 (Telephone number, including area code, of agent for service)

Copy to:

Fletcher Payne Chief Financial Officer Catalyst Biosciences, Inc. 260 Littlefield Avenue South San Francisco, CA 94080 (650) 871-0761 (Calculation of Registration Fee on following page) 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 \Box

Non-accelerated filer \Box (Do not check if a smaller reporting company)

Accelerated filer

Smaller reporting company \square

Emerging Growth Company \boxtimes

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 Securities Act.

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
Catalyst Biosciences, Inc. 2015 Stock Incentive Plan				
Common Stock, par value \$0.001 per share	950,000(2)	\$4.54(3)	\$4,313,000	\$499.88

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall also cover any additional shares of common stock that may be offered or issued in connection with any stock dividend, stock split or any other similar transaction effected without the receipt of consideration which results in an increase in the number of the Registrant's outstanding shares of common stock.

(2) Represents additional shares of common stock issuable pursuant to the Catalyst Biosciences, Inc. 2015 Stock Incentive Plan, as amended and restated, being registered herein.

(3) Pursuant to Rule 457(c) and (h)(1) under the Securities Act, based on the average \$4.54 of the high \$4.66 and low \$4.42 prices of the Registrant's common stock on July 12, 2017, as reported on The NASDAQ Capital Market.

EXPLANATORY NOTE

Catalyst Biosciences, Inc. (the "Company") has prepared this Registration Statement to (a) register an additional 950,000 shares of its common stock for issuance under the Company's 2015 Stock Incentive Plan, as amended and restated (the "Plan"). An amendment and restatement of the Plan, including an increase of 950,000 shares of common stock available for issuance thereunder, was approved at the Company's annual meeting of stockholders on June 15, 2017. Pursuant to General Instruction E of Form S-8, the Company incorporates by reference into this Registration Statement, except to the extent supplemented, amended or superseded by the information set forth herein, the contents of the Company's Registration Statement on Form S-8 relating to the Company's Plan filed with the Securities and Exchange Commission on August 21, 2015 (Registration No. 333-206523).

PART I

Item 1. Plan Information.*

Item 2. Registrant Information and Employee Plan Annual Information.*

* The documents containing the information specified in Part I of Form S-8 will be sent or given to employees as specified by Rule 428(b)(1) of the Securities Act. Such documents need not be filed with the Securities and Exchange Commission (the "Commission") either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 of the Securities Act. These documents and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II of this Registration Statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents, which have been filed with the Commission, are incorporated by reference herein and made a part hereof:

(a) The Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016 filed with the Commission on March 8, 2017, which includes audited consolidated financial statements for the fiscal year ended December 31, 2016;

(b) The Company's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2017, filed with the Commission on May 11, 2017;

(c) The Company's Current Reports on Form 8-K filed with the Commission on February 2, 2017, February 10, 2017, April, 13, 2017, April 24, 2017, June 16, 2017, and July 14, 2017;

(d) The description of the Company's common stock, par value \$0.001 per share, contained in the Company's Registration Statement on Form 8-A filed with the Commission on April 6, 2006, with respect to such common stock, including any subsequent amendment or report filed for the purposes of updating such description; and

(e) All other reports filed by the Company pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), since the end of the fiscal year covered by the audited financial statements described in (a) above.

All documents subsequently filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment 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 part hereof from the date of the filing of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this Registration Statement. Any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

To the extent that any proxy statement or Form 8-K is incorporated herein by reference, such incorporation shall not include any information contained in such proxy statement or Form 8-K which is not, pursuant to the Commission's rules, deemed to be "filed" with the Commission or subject to the liabilities of Section 18 of the Exchange Act.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

The Company's restated certificate of incorporation provides that the Company's directors shall not be personally liable to the Company or its stockholders for monetary damages for any breach of fiduciary duty as a director, except for liability for breach of the director's duty of loyalty to the Company or its stockholders, for acts or omissions not in good faith or involving intentional misconduct or a knowing violation of law, for payment of dividends or approval of stock purchases or redemptions that are prohibited by the Delaware General Corporation Law ("DGCL"), or for any transaction from which the director derived an improper personal benefit. Under the DGCL, the Company's directors have a fiduciary duty to the Company that is not eliminated by this provision of the restated certificate of incorporation and, in appropriate circumstances, equitable remedies such as injunctive or other forms of non-monetary relief will remain available. This provision also does not affect the Company's directors' responsibilities under any other laws, such as federal securities laws or state or federal environmental laws.

Section 145 of the DGCL empowers a corporation to indemnify its directors and officers against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by them in connection with any action, suit or proceeding brought by third parties by reason of the fact that they were or are directors or officers of the corporation, if they acted in good faith, in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe that their conduct was unlawful. The DGCL provides further that the indemnification permitted thereunder shall not be deemed exclusive of any other rights to which the directors and officers may be entitled under the corporation's bylaws, any agreement, a vote of stockholders or otherwise. The Company's restated certificate of incorporation provides that, to the fullest extent permitted by Section 145 of the DGCL, the Company shall indemnify any person who is or was a director or officer of the Company, or is or was serving at the Company's request as a director, officer or trustee of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against the expenses, liabilities or other matters referred to in or covered by Section 145 of the DGCL. The Company's bylaws provide that the Company will indemnify any person who was or is a party or threatened to be made a party to any proceeding by reason of the fact that such person is or was a director or officer of the Company's request as a director, officer or trustee of another corporatios, partnership, joint venture, trust, employee benefit plan or other enterprise, addirector or officer of the Company's request as a director, officer or trustee of another corporatios, partnership, joint venture, trust, employee benefit plan or other enterprise, addirector or officer of the Company's request as a director, officer or trustee of

In addition, the Company has entered into indemnification agreements with each of its directors and with certain of the Company's executive officers. Pursuant to the indemnification agreements, the Company has agreed to indemnify and hold harmless these directors and officers to the fullest extent permitted by the DGCL. The agreements generally cover expenses that a director or officer incurs or amounts that a director or officer becomes obligated to pay because of any proceeding to which he or she is made or threatened to be made a party or participant by reason of his or her service as a current or former director, officer, employee or agent of the Company. The agreements also provide for the advancement of expenses to the directors and officers subject to specified conditions. There are certain exceptions to the Company's obligation to indemnify the directors and officers, including any intentional malfeasance or act where the director or officer did not in good faith believe he or she was acting in the Company's best interests, with respect to "short-swing" profit claims under Section 16(b) of the Exchange Act and, with certain exceptions, with respect to proceedings that he or she initiates.

Section 145 of the DGCL also empowers a corporation to purchase insurance for its officers and directors for such liabilities. The Company maintains liability insurance for its officers and directors.

Item 7. Exemption from Registration Claimed.

Not Applicable.

Item 8. Exhibits.

Exhibit No.	Description
4.1	Fourth Amended and Restated Certificate of Incorporation of the Company, which is incorporated herein by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 (Registration No. 333-133881) filed with the Commission on May 8, 2006.
4.2	Certificate of Amendment to the Fourth Amended and Restated Certificate of Incorporation of the Company, which is incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the Commission on August 20, 2015.
4.3	Second Certificate of Amendment to the Fourth Amendment and Restated Certificate of Incorporation of the Company, which is incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the Commission on February 10, 2017.
4.4	Bylaws of the Company, as amended and restated effective March 5, 2015, which are incorporated herein by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the Commission on March 6, 2015.
4.5	Specimen Certificate of common stock, which is incorporated herein by reference to Exhibit 4.1 to Amendment No. 3 to the Company's Registration Statement on Form S-1/A (File No. 333-131050) filed with the Commission on March 16, 2006.
5.1	Opinion of Morrison & Foerster LLP.
23.1	Consent of Morrison & Foerster LLP, counsel to the Company (included in Exhibit 5.1).
23.2	Consent of EisnerAmper LLP.
24	Power of Attorney (included on signature page).
99.1	Catalyst Biosciences, Inc. (formerly Targacept, Inc.) 2015 Stock Incentive Plan, as amended and restated, which is incorporated by reference to Appendix A to the Company's Definitive Proxy Statement (File No. 000-51173) filed with the Commission on May 18, 2017.
99.2	Form of Incentive Stock Option Award Notice, which is incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the Commission on July 14, 2017.
99.3	Form of Non-qualified Stock Option Award Notice, which is incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the Commission on July 14, 2017.

Item 9. Undertakings.

- (a) The undersigned Company 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 this 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 Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent 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 this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (a)(1)(i) and (a)(1)(i) shall not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with, or furnished to the Commission by the Company 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 undersigned Company hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Company'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 Company pursuant to the foregoing provisions, or otherwise, the Company has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Company of expenses incurred or paid by a director, officer or controlling person of the Company 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 Company 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, Catalyst Biosciences, Inc. 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 South San Francisco, State of California, on July 14, 2017.

CATALYST BIOSCIENCES, INC.

By:

/s/ Nassim Usman, Ph.D.

Nassim Usman, Ph.D. President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that the undersigned directors and officers of Catalyst Biosciences, Inc. do hereby constitute and appoint Nassim Usman, Ph.D. and Fletcher Payne, and each of them severally, our true and lawful attorneys-in-fact and agents, each acting alone with full power of substitution and resubstitution, to do any and all such acts and things in our name and on our behalf in our capacities as directors and officers and to execute any and all instruments for us and in our names in the capacities indicated below, which said attorneys and agents, or either of them, may deem necessary or advisable to enable said corporation to comply with the Securities Act, and any rules, regulations and requirements of the Commission, in connection with this Registration Statement under the Securities Act, including specifically, but without limitation, power and authority to sign for us or in any of our names and in the capacities indicated below any and all amendments (including post effective amendments) to this Registration Statement, or any related Registration Statement that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act; and we do hereby ratify and confirm all that the said attorneys and agents, or either of them, shall do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ Nassim Usman, Ph.D. Nassim Usman, Ph.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	July 14, 2017
/s/ Fletcher Payne Fletcher Payne	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	July 14, 2017
/s/ Harold E. Selick, Ph.D. Harold E. Selick, Ph.D.	Chairman of the Board of Directors	July 14, 2017
/s/ Stephen A. Hill, M.D. Stephen A. Hill, M.D.	Director	July 14, 2017
/s/ Augustine Lawlor Augustine Lawlor	Director	July 14, 2017
/s/ Jeff Himawan, Ph.D. Jeff Himawan, Ph.D.	Director	July 14, 2017
/s/ John P. Richard John P. Richard	Director	July 14, 2017
/s/ Errol B. De Souza, Ph.D. Errol B. De Souza, Ph.D.	Director	July 14, 2017

INDEX TO EXHIBITS

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MORRISON FOERSTER

755 PAGE MILL ROAD PALO ALTO CALIFORNIA 94304-1018 TELEPHONE: 650.813.5600 FACSIMILE: 650.494.0792 WWW.MOFO.COM MORRISON FOERSTER LLP BEUING, BERLIN, BRUSSELS, DENVER, HONG KONG, LONDON, LOS ANGELES, NEW YORK, NORTHERN VIRGINIA, PALO ALTO, SAN DIEGO, SAN FRANCISCO, SHANGHAI, SINGAPORE, TOKYO, WASHINGTON, D.C.

July 14, 2017

Catalyst Biosciences, Inc. 260 Littlefield Avenue South San Francisco, CA 94080

Registration Statement on Form S-8

Ladies and Gentlemen:

At your request, we have examined the Registration Statement on Form S-8 (the "Registration Statement") filed by Catalyst Biosciences, Inc. (the "Company") with the Securities and Exchange Commission (the "Commission") on July 14, 2017, relating to the registration under the Securities Act of 1933, as amended, of (i) an aggregate of 950,000 shares of the Company's Common Stock (the "Shares") which will be issuable under the Catalyst Biosciences, Inc. 2015 Stock Incentive Plan, as amended and restated (the "2015 Plan").

As your counsel in connection with the Registration Statement, we have examined the proceedings taken by you and proposed to be taken by you in connection with the adoption of the 2015 Plan and the authorization, issuance and sale of the Shares under the 2015 Plan, and such documents, matters of fact and questions of law as we have deemed necessary to render this opinion. For the purpose of the opinion rendered below, we have assumed that such proceedings are timely completed in the manner presently proposed by you and that, upon each issuance of Shares, the Company will receive the consideration for such Shares required by the terms of the 2015 Plan.

Based upon and subject to the foregoing, we are of the opinion that the Shares, when issued and outstanding pursuant to the terms of the 2015 Plan, will be legally and validly issued, fully paid and non-assessable.

We consent to the use of this opinion as an exhibit to the Registration Statement and further consent to all references to us in the Registration Statement and in any amendment thereto.

Very truly yours,

/s/ Morrison & Foerster LLP

Morrison & Foerster LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement of Catalyst Biosciences, Inc. on Form S-8 to be filed on or about July 14, 2017 of our report dated March 8, 2017, on our audits of the consolidated financial statements as of December 31, 2016 and 2015 and for each of the years then ended, which report was included in the Annual Report on Form 10-K filed on March 8, 2017.

/s/ EISNERAMPER LLP

Iselin, New Jersey July 14, 2017