

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

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Asterias Biotherapeutics, Inc.

(Exact name of registrant as specified in its charter)

DELAWARE

(State or Other Jurisdiction of Incorporation)

46-1047971

(I.R.S. Employer Identification Number)

**6300 Dumbarton Circle
Fremont, California 94555**

(Address, including zip code, of registrant's principal executive offices)

2013 Equity Incentive Plan
(Full title of the plan)

**Stephen L. Cartt
Chief Executive Officer
Asterias Biotherapeutics, Inc.
6300 Dumbarton Circle
Fremont, California 94555
(510) 456-3800**

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

Copies to:

**Jeffrey A Baumel, Esq.
Dentons US LLP
1221 Avenue of the Americas
New York, New York 10020
(212) 768-6700**

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

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

Accelerated filer

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 Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Series A Common Stock, \$0.001 par value per share	2,500,000(1)	\$ 3.33(2)	\$ 8,325,000(2)	\$ 964.87

(1) Represents an additional 2,500,000 shares of Asterias Biotherapeutics' Series A Common Stock, par value \$0.001 per share ("Series A Common Stock"), issuable under the Asterias Biotherapeutics, Inc. 2013 Equity Incentive Plan, as amended (the "2013 Plan"). Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall be deemed to also cover any additional shares that become issuable under the 2013 Plan by reason of any stock dividend, stock split, recapitalization or other similar transaction.

(2) Estimated in accordance with Rules 457 (c) and (h) solely for the purpose of calculating the registration fee on the basis of \$3.33 per share, which is the average of the high and low sales prices per share of the Series A Common Stock as listed on the NYSE MKT on June 19, 2017, which date is within 5 business days prior to the date of filing of this Registration Statement.

EXPLANATORY NOTE

This registration statement is being filed by Asterias Biotherapeutics, Inc., a Delaware corporation (the "Registrant"), to register the issuance of an additional 2,500,000 shares of the Registrant's Series A Common Stock that may be issued pursuant to the 2013 Plan, plus any additional securities that become issuable under the 2013 Plan by reason of any stock dividend, stock split, recapitalization or other similar transaction.

The Company previously registered shares of Series A Common Stock for issuance under the 2013 Plan on registration statements on Form S-8 filed with the Securities and Exchange Commission (the "Commission") on March 12, 2015 (File No. 333-202674), August 7, 2015 (File No. 333-206237) and June 13, 2016 (File No. 333-211995). Pursuant to General Instruction E to Form S-8 and with respect to the additional shares of Series A Common Stock registered hereunder for issuance under the 2013 Plan, the contents of such registration statements, including all exhibits thereto as applicable, are incorporated herein by reference.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and prior to the filing of a post-effective amendment to this registration statement indicating that all securities offered have been sold or deregistering all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of such documents. In no event, however, will any information that the Registrant discloses under Item 2.02 or 7.01 of any Current Report on Form 8-K that the Registrant may from time to time furnish to the Commission be incorporated by reference into, or otherwise become a part of, this registration statement. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or is deemed to be incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of this registration statement, except as so modified or superseded.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in Part I, Items 1 and 2, will be delivered to each of the participants in accordance with Rule 428 under the Securities Act and the Note to Part I of Form S-8. Those documents do not need to be filed with the Commission either as part of this registration statement or as prospectuses or prospectus supplements pursuant to Rule 424 under 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

Item 3. Incorporation of Documents by Reference.

The Registrant hereby incorporates by reference into this registration statement the following documents previously filed with the Commission:

1. The Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed by the Registrant with the Commission on March 28, 2017;
2. The Registrant's Quarterly Report on Form 10-Q filed with the Commission on May 11, 2017;
3. The Registrant's Current Reports on Form 8-K filed with the Commission on February 3, 2017, May 23, 2017 and June 16, 2017; and
4. The description of the Registrant's Series A Common Stock contained in its Registration Statement on Form 8-A filed with the Commission on September 26, 2014.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act and prior to the filing of a post-effective amendment to this registration statement indicating that all securities offered have been sold or deregistering all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of such documents. In no event, however, will any information that the Registrant discloses under Item 2.02 or 7.01 of any Current Report on Form 8-K that the Registrant may from time to time furnish to the Commission be incorporated by reference into, or otherwise become a part of, this registration statement. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document which also is incorporated or is deemed to be incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of this registration statement, except as so modified or superseded.

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 8. Exhibits.

Exhibit Number	Exhibit Title
5.1*	Opinion of Dentons US LLP, legal counsel.
23.1*	Consent of Dentons US LLP (included in Exhibit 5.1).
23.2*	Consent of OUM & Co. LLP, independent registered public accounting firm.
24.1*	Power of Attorney (included on signature page to this registration statement).

* Filed herewith.

SIGNATURES

Pursuant to the requirements of the Securities Act, 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 Fremont, State of California, on this 23rd day of June, 2017.

ASTERIAS BIOTHERAPEUTICS, INC.
(Registrant)

By: /s/ Stephen L. Cartt
Name: Stephen L. Cartt
Title: Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Stephen L. Cartt and Russell L. Skibsted, and each of them acting alone, as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him in any and all capacities, to sign this registration statement on Form S-8 of Asterias Biotherapeutics, Inc., and any or all amendments thereto (including post-effective amendments), and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Commission and any applicable securities exchange or securities self-regulatory body, 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, or their substitute or substitutes, may lawfully 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.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Stephen L. Cartt</u> Stephen L. Cartt	Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	June 23, 2017
<u>/s/ Ryan D. Chavez</u> Ryan D. Chavez	Chief Financial Officer <i>(Principal Financial Officer)</i>	June 23, 2017
<u>/s/ Alfred D. Kingsley</u> Alfred D. Kingsley	Director	June 23, 2017
<u>/s/ Richard T. LeBuhn</u> Richard T. LeBuhn	Director	June 23, 2017
<u>/s/ Don M. Bailey</u> Don M. Bailey	Chairman of the Board of Directors	June 23, 2017
<u>/s/ Michael D. West</u> Michael D. West, Ph.D.	Director	June 23, 2017

<i>/s/ Andrew Arno</i> Andrew Arno	Director	June 23, 2017
<i>/s/ Natale S. Ricciardi</i> Natale S. Ricciardi	Director	June 23, 2017
<i>/s/ Aditya Mohanty</i> Aditya Mohanty	Director	June 23, 2017
<i>/s/ Dr. Howard I. Scher</i> Dr. Howard I. Scher, M.D.	Director	June 23, 2017

INDEX TO EXHIBITS

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* Filed herewith.



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June 23, 2017

Board of Directors
Asterias Biotherapeutics, Inc.
6300 Dumbarton Circle
Fremont, CA 94555

Re: Asterias Biotherapeutics, Inc.-- Registration Statement on Form S-8

Gentlemen:

We have acted as counsel to Asterias Biotherapeutics, Inc., a corporation organized under the laws of the State of Delaware (the "Company"), in connection with the registration under the Securities Act of 1933, as amended (the "Securities Act"), of the issuance from time to time of 2,500,000 shares (the "Shares") of the Company's Series A common stock, par value \$0.001 per share, pursuant to the Company's 2013 Equity Incentive Plan (the "Plan") on a Registration Statement on Form S-8 being filed on the date hereof by the Company with the U.S. Securities and Exchange Commission (the "Commission"), as it may be amended (the "Registration Statement").

We are delivering this opinion to you in accordance with your request and the requirements of Item 8 of Form S-8 and Item 601(b)(5) of Regulation S-K promulgated by the Commission.

In connection with rendering this opinion, we have examined originals, certified copies or copies otherwise identified as being true copies of the following:

- (a) the Registration Statement;
- (b) the Amended and Restated Certificate of Incorporation of the Company, as amended and restated to date;
- (c) the Bylaws of the Company, as amended to date;
- (d) resolutions adopted by the Board of Directors of the Company relating to its proposed issuance of the Shares;
- (e) the Plan; and
- (f) such other instruments and documents as we have deemed relevant or necessary in connection with our opinion set forth herein.

In our examination, we have assumed (i) the genuineness of all signatures; (ii) the authenticity of all documents submitted to us as originals; (iii) the conformity to original documents of all documents submitted to us as certified, conformed, photostatic, electronic or facsimile copies and the authenticity of the originals of such documents; (iv) the authority of all persons signing any document; (v) the enforceability of all the documents and agreements we have reviewed in accordance with their respective terms against the parties thereto; and (vi) the truth and accuracy of all matters of fact set forth in all certificates and other instruments furnished to us.

Based on the foregoing, and in reliance thereon, and subject to the qualifications, limitations and exceptions stated herein, we are of the opinion, having due regard for such legal considerations as we deem relevant, that the Shares have been duly authorized and, when sold and paid for in accordance with the terms and conditions set forth in the Plan, will be validly issued, fully paid and non-assessable.

We express no opinion as to the laws of any jurisdiction other than the General Corporation Law of the State of Delaware.

This opinion is rendered on the date hereof, and we have no continuing obligation hereunder to inform you of changes of law or fact subsequent to the date hereof or facts of which we have become aware after the date hereof.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement. In giving this consent, we do not hereby admit that we are within the category of persons whose consent is required by Section 7 of the Securities Act or the rules and regulations promulgated thereunder by the Commission.

Very truly yours,

/s/ Dentons US LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement on Form S-8, pertaining to the 2013 Equity Incentive Plan of Asterias Biotherapeutics, Inc., of our reports dated March 28, 2017 relating to the financial statements and the effectiveness of Asterias Biotherapeutics' internal control over financial reporting appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2016.

We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ OUM & CO. LLP

San Francisco, California

June 23, 2017
