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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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**FLEX PHARMA, INC.**  
(Exact name of registrant as specified in its charter)

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

**46-5087339**  
(I.R.S. Employer Identification No.)

**800 Boylston Street, 24th Floor**  
**Boston, MA 02199**  
(Address of Principal Executive Offices)

**02199**  
(Zip Code)

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**2015 Equity Incentive Plan**  
**2015 Employee Stock Purchase Plan**  
(Full titles of the plans)

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**William McVicar, Ph.D.**  
**President and Chief Executive Officer**  
**Flex Pharma, Inc.**  
**800 Boylston Street, 24<sup>th</sup> Floor**  
**Boston, MA 02199**  
**(617) 874-1821**  
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*

**Lester Fagen**  
**Marc Recht**  
**Jaime Chase**  
Cooley LLP  
500 Boylston Street, 14th Floor  
Boston, Massachusetts 02116  
(617) 937-2300

**John McCabe**  
Chief Financial Officer  
Flex Pharma, Inc.  
800 Boylston Street, 24<sup>th</sup> Floor  
Boston, Massachusetts 02199  
(617) 874-1821

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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/> (Do not check if a smaller reporting company)	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be Registered <sup>(1)</sup>	Proposed Maximum Offering Price Per Share <sup>(2)</sup>	Proposed Maximum Aggregate Offering Price <sup>(2)</sup>	Amount of Registration Fee
<b>2015 Equity Incentive Plan</b> Common Stock, \$0.0001 par value per share	718,887 shares <sup>(3)</sup>	\$4.05	\$2,911,492.35	\$362.48
<b>2015 Employee Stock Purchase Plan</b> Common Stock, \$0.0001 par value per share	179,722 shares <sup>(4)</sup>	\$4.05	\$727,874.10	\$90.62

- (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, par value \$0.0001 per share ("Common Stock"), that become issuable under the plans set forth herein by reason of any stock dividend, stock split, recapitalization or other similar transaction that increases the number of the Registrant's outstanding shares of Common Stock.
- (2) This estimate is made pursuant to Rule 457(h) and Rule 457(c)(1) of the Securities Act solely for purposes of calculating the registration fee. The offering price per share and aggregate offering price are based upon the average of the high and low prices of the Common Stock on March 2, 2018, as reported on The Nasdaq Global Market.
- (3) Represents (i) shares of Common Stock that were automatically added to the number of shares authorized for issuance under the Flex Pharma, Inc. 2015 Equity Incentive Plan (the "2015 EIP") on January 1, 2018 pursuant to an "evergreen" provision contained in the 2015 EIP. Pursuant to the evergreen provision, on January 1, 2018 the number of shares authorized for issuance under the 2015 EIP automatically increased by an amount equal to 4% of the total number of shares of Capital Stock (as defined in the 2015 EIP) outstanding on December 31, 2017.
- (4) Represents shares of Common Stock that were automatically added to the shares authorized for issuance under the Flex Pharma, Inc. 2015 Employee Stock Purchase Plan (the "2015 ESPP") on January 1, 2018 pursuant to an "evergreen" provision contained in the 2015 ESPP. Pursuant to such provision, on January 1, 2018 the number of shares authorized for issuance under the 2015 ESPP automatically increased by a number equal to the lesser of: (a) 1% of the total number of shares of Capital Stock outstanding on December 31<sup>st</sup> of the preceding calendar year; (b) 1,000,000 shares of Common Stock; and (c) a number of shares of Common Stock determined by the Registrant's board of directors that is less than the amount set forth in the foregoing clauses (a) or (b).

## EXPLANATORY NOTE

This Registration Statement on Form S-8 is being filed for the purpose of registering an additional 898,609 shares of Common Stock of Flex Pharma, Inc. (the “Registrant”) issuable pursuant to the Flex Pharma, Inc. 2015 Equity Incentive Plan (the “2015 EIP”) and the Flex Pharma, Inc. 2015 Employee Stock Purchase Plan (the “2015 ESPP”). These additional shares of Common Stock are securities of the same class as other securities for which an original registration statement on Form S-8 (File No. 333-201816) was filed with the Securities and Exchange Commission (the “Commission”) on February 2, 2015. These additional shares of Common Stock have become reserved for issuance as a result of the operation of the “evergreen” provisions in each of the 2015 EIP and the 2015 ESPP, which provide that the total number of shares subject to such plans will be increased each year pursuant to a specified formula.

## PART II

### ITEM 3. 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 a Registration Statement of the Registrant on Form S-8 relating to the same employee benefit plans is effective.

The Registrant previously registered shares of its Common Stock for issuance under the 2015 EIP and the 2015 ESPP under a Registration Statement on Form S-8 filed with the Commission on February 2, 2015 (File No. 333-201816), March 18, 2016 (File No. 333-210283) and March 8, 2017 (File No. 333-216534). Pursuant to General Instruction E to Form S-8, this Registration Statement hereby incorporates by reference the contents of the Registration Statement referenced above.

### ITEM 8. EXHIBITS

<b>Exhibit Number</b>	<b>Description</b>
4.1 <sup>(1)</sup>	<a href="#">Amended and Restated Certificate of Incorporation of the Registrant.</a>
4.2 <sup>(2)</sup>	<a href="#">Amended and Restated Bylaws of the Registrant.</a>
4.3 <sup>(3)</sup>	<a href="#">Form of Common Stock Certificate of the Registrant.</a>
5.1	<a href="#">Opinion of Cooley LLP.</a>
23.1	<a href="#">Consent of Ernst &amp; Young, an Independent Registered Public Accounting Firm.</a>
23.2	<a href="#">Consent of Cooley LLP. Reference is made to Exhibit 5.1.</a>
24.1	<a href="#">Power of Attorney. Reference is made to the signature page hereto.</a>
99.2 <sup>(4)</sup>	<a href="#">Flex Pharma, Inc. 2015 Equity Incentive Plan.</a>
99.3 <sup>(5)</sup>	<a href="#">Flex Pharma, Inc. 2015 Employee Stock Purchase Plan.</a>
99.4 <sup>(6)</sup>	<a href="#">Forms of Stock Option Agreement, Notice of Exercise and Stock Option Grant Notice under the Flex Pharma, Inc. 2015 Equity Incentive Plan.</a>

<sup>(1)</sup> Previously filed as Exhibit 3.5 to the Registrant’s Registration Statement on Form S-1 (File No. 333-201276), filed with the Commission on January 13, 2015, and incorporated herein by reference.

<sup>(2)</sup> Previously filed as Exhibit 3.7 to the Registrant’s Registration Statement on Form S-1 (File No. 333-201276), filed with the Commission on January 13, 2015, and incorporated herein by reference.

<sup>(3)</sup> Previously filed as Exhibit 4.1 to the Registrant’s Registration Statement on Form S-1 (File No. 333-201276), filed with the Commission on January 13, 2015, and incorporated herein by reference.

<sup>(4)</sup> Previously filed as Exhibit 10.3 to the Registrant’s Registration Statement on Form S-1 (File No. 333-201276), filed with the Commission on January 13, 2015, and incorporated herein by reference.

<sup>(5)</sup> Previously filed as Exhibit 10.4 to the Registrant’s Registration Statement on Form S-1 (File No. 333-201276), filed with the Commission on January 13, 2015, and incorporated herein by reference.

<sup>(6)</sup> Previously filed as Exhibit 10.4 to the Registrant’s Annual Report on Form 10-K (File No. 001-36812), filed with the Commission on March 24, 2015, and incorporated herein by reference.



## 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 Boston, Commonwealth of Massachusetts, on March 7, 2018.

### FLEX PHARMA, INC.

By: /s/ William McVicar  
William McVicar, Ph.D.  
President and Chief Executive Officer

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints William McVicar and John McCabe, and each of them, as his true and lawful attorneys-in-fact and agents, each with the 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 attorneys-in-fact and agents, and each of them, 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 or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their 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, 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/ William McVicar</u> William McVicar, Ph.D.	President, Chief Executive Officer, Member of the Board of Directors (Principal Executive Officer)	March 7, 2018
<u>/s/ John McCabe</u> John McCabe	Chief Financial Officer (Principal Financial and Accounting Officer)	March 7, 2018
<u>/s/ Peter Barton Hutt</u> Peter Barton Hutt	Member of the Board of Directors	March 7, 2018
<u>/s/ Jeffrey Capello</u> Jeffrey Capello	Member of the Board of Directors	March 7, 2018
<u>/s/ Marc Kozin</u> Marc Kozin	Member of the Board of Directors	March 7, 2018
<u>/s/ Roderick MacKinnon</u> Roderick MacKinnon, M.D.	Member of the Board of Directors	March 7, 2018
<u>/s/ Roger Tung</u> Roger Tung	Member of the Board of Directors	March 7, 2018
<u>/s/ Stuart Randle</u> Stuart Randle	Member of the Board of Directors	March 7, 2018
<u>/s/ Christoph Westphal</u> Christoph Westphal, M.D., Ph.D.	Member of the Board of Directors	March 7, 2018
<u>/s/ Michelle Stacy</u> Michelle Stacy	Member of the Board of Directors	March 7, 2018



**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the 2015 Equity Incentive Plan and the 2015 Employee Stock Purchase Plan of Flex Pharma, Inc. of our report dated March 7, 2018, with respect to the consolidated financial statements of Flex Pharma, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2017, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts  
March 7, 2018