

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

FORM S-8

REGISTRATION STATEMENT

Under

The Securities Act of 1933

XENON PHARMACEUTICALS INC.

(Exact name of Registrant as specified in its charter)

Canada
(State or other jurisdiction of
incorporation or organization)

98-0661854
(I.R.S. Employer
Identification Number)

200 – 3650 Gilmore Way
Burnaby, British Columbia V5G 4W8
Canada (604) 484-3300
(Address of principal executive offices, including zip code)

2014 Equity Incentive Plan
(Full title of the plan)

Simon N. Pimstone
President and Chief Executive Officer
Xenon Pharmaceuticals Inc.
200 – 3650 Gilmore Way
Burnaby, British Columbia V5G 4W8
Canada
(604) 484-3300
(Name, address and telephone number, including area code, of agent for service)

Copies to:

Ian C. Mortimer
Chief Financial and
Chief Operating Officer
Xenon Pharmaceuticals Inc.
200 – 3650 Gilmore Way
Burnaby, British Columbia V5G 4W8
Canada
(604) 484-3300

Jeffrey D. Saper
Steven V. Bernard
Bryan D. King
Wilson Sonsini Goodrich & Rosati,
Professional Corporation
650 Page Mill Road
Palo Alto, California 94304
(650) 493-9300

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 Accelerated filer
Non-accelerated filer Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Maximum Amount to be Registered (1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Shares, no par value per share, reserved for issuance pursuant to the 2014 Equity Incentive Plan	500,000 (2)	\$8.53 (3)	\$4,265,000	\$495
TOTAL:	500,000		\$4,265,000	\$495

- (1) Pursuant to Rule 416(a) of the Securities Act of 1933, as amended, this Registration Statement shall also cover any additional common shares of the Registrant that become issuable under the 2014 Equity Incentive Plan (the "2014 Plan") by reason of any share dividend, share split, recapitalization or other similar transaction effected without receipt of consideration that increases the number of the Registrant's outstanding common shares.
- (2) Represents 500,000 additional common shares reserved for issuance as a result of the annual evergreen increase pursuant to the 2014 Plan.
- (3) Estimated in accordance with Rule 457(h) solely for the purpose of calculating the registration fee on the basis of \$8.53, the average of the high and low prices of the Registrant's common shares as reported on The NASDAQ Global Market on March 3, 2017.

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**XENON PHARMACEUTICALS INC.
REGISTRATION OF ADDITIONAL SECURITIES
PURSUANT TO GENERAL INSTRUCTION E**

This Registration Statement registers additional common shares of Xenon Pharmaceuticals Inc. (the “**Registrant**”) to be issued pursuant to the Registrant’s 2014 Equity Incentive Plan (the “**2014 Plan**”). Accordingly, the contents of (i) the previous Registration Statement on Form S-8 filed by the Registrant with the Securities and Exchange Commission (the “**Commission**”) on November 5, 2014 (File No. 333-199860); (ii) the previous Registration Statement on Form S-8 filed by the Registrant with the Commission pursuant to General Instruction E for the 2014 Plan on March 16, 2015 (File No. 333-202765) and (iii) the previous Registration Statement on Form S-8 filed by the Registrant with the Commission pursuant to General Instruction E for the 2014 Plan on March 9, 2016 (File No. 333-210050) (together, the “**Previous Forms S-8**”), including periodic reports filed after the Previous Forms S-8 to maintain current information about the Registrant, are incorporated by reference into this Registration Statement pursuant to General Instruction E of Form S-8.

Item 3. Incorporation of Documents by Reference.

The following documents previously filed with the Commission are hereby incorporated by reference:

- (1) The Registrant’s Annual Report on Form 10-K for the fiscal year ended December 31, 2016, filed with the Commission on March 8, 2017;
- (2) All other reports filed with the Commission pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the “**Act**”), since the end of the fiscal year covered by the Registrant’s Annual Report referred to in (1) above; and
- (3) The description of the Registrant’s common shares contained in the Registration Statement on Form 8-A12B (File No. 001-36687) filed with the Commission on October 10, 2014, pursuant to Section 12(b) of the Act, including any amendment or report filed for the purpose of updating such description.

All documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Act, prior to the filing of a post-effective amendment which indicates that all securities registered 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 filing of such documents; provided, however, that documents or information deemed to have been furnished and not filed in accordance with the rules of the Commission shall not be deemed incorporated by reference into this Registration Statement. Any statement contained 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 subsequently filed document which also is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Under no circumstances will any information furnished under current items 2.02 or 7.01 of Form 8-K be deemed incorporated herein by reference unless such Form 8-K expressly provides to the contrary.

Item 8. Exhibits

Exhibit Number	Description of Document	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
4.1	Specimen common share certificate of the Registrant.	S-1/A	333-198666	4.1	10/6/2014
4.2	2014 Equity Incentive Plan.	S-1	333-198666	10.8	9/10/2014
4.3	Form of Share Option Agreement, as amended, under the 2014 Equity Incentive Plan.	10-K	001-36687	10.8A	03/08/2017
5.1	Opinion of McCarthy Tétrault LLP.				
23.1	Consent of KPMG LLOP, Independent Registered Public Accounting Firm.				
23.2	Consent of McCarthy Tétrault LLP (contained in Exhibit 5.1 hereto).				
24.1	Power of Attorney (contained on signature page hereto).				

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 Burnaby, British Columbia, Canada, on March 8, 2017.

XENON PHARMACEUTICALS INC.

By: _____ /s/ Simon Pimstone

Simon Pimstone
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Simon Pimstone and Ian Mortimer as his and her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities (including his or her capacity as a director and/or officer of Xenon Pharmaceuticals Inc.) to sign any or all amendments (including post-effective amendments) to this registration statement on Form S-8, as amended, and to file the same, with all exhibits thereto, and all 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 and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agents or any of them, or his or her 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 on Form S-8 has been signed by the following persons in the capacities and on the dates indicated.

Name	Title	Date
<u>/s/ Simon Pimstone</u> Simon Pimstone	President, Chief Executive Officer and Director (Principal Executive Officer)	March 8, 2017
<u>/s/ Ian Mortimer</u> Ian Mortimer	Chief Financial Officer and Chief Operating Officer (Principal Financial and Accounting Officer)	March 8, 2017
<u>/s/ Michael Tarnow</u> Michael Tarnow	Chair of the Board of Directors	March 8, 2017
<u>/s/ Mohammad Azab</u> Mohammad Azab	Director	March 8, 2017
<u>/s/ Steven Gannon</u> Steven Gannon	Director	March 8, 2017
<u>/s/ Michael Hayden</u> Michael Hayden	Director	March 8, 2017
<u>/s/ Frank Holler</u> Frank Holler	Director	March 8, 2017
<u>/s/ Gary Patou</u> Gary Patou	Director	March 8, 2017
<u>/s/ Richard Scheller</u> Richard Scheller	Director	March 8, 2017
<u>/s/ Dawn Svoronos</u> Dawn Svoronos	Director	March 8, 2017

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23.2	Consent of McCarthy Tétrault LLP (contained in Exhibit 5.1 hereto).				
24.1	Power of Attorney (contained on signature page hereto).				

McCarthy Tétrault LLP
Suite 2400, 745 Thurlow Street
Vancouver BC V6E 0C5
Canada
Tel: 604-643-7100
Fax: 604-643-7900



March 8, 2017

Xenon Pharmaceuticals Inc.
200 – 3650 Gilmore Way
Burnaby, BC V5G 4W8
Canada

Dear Sirs/Mesdames:

Re: Registration Statement on Form S-8 of Xenon Pharmaceuticals Inc.

We have acted as Canadian counsel to Xenon Pharmaceuticals Inc. (the “**Company**”), a corporation continued under the federal laws of Canada, in connection with the Registration Statement on Form S-8 (the “**Registration Statement**”) to be filed by the Company with the U.S. Securities and Exchange Commission (the “**SEC**”) relating to the registration under the Securities Act of 1933, as amended, of 500,000 common shares in the capital of the Company (the “**Shares**”) to be issued under the Company’s 2014 Equity Incentive Plan (the “**Plan**”).

In connection with giving this opinion, we have examined the Registration Statement (including exhibits thereto). We have also examined originals, certified or otherwise identified to our satisfaction, of such public and corporate records, certificates, instruments and other documents as we have considered necessary in order to express the opinion set out below. With respect to the accuracy of factual matters material to this opinion, we have relied upon certificates or comparable documents and representations of public officials and of officers and representatives of the Company.

In giving this opinion, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals and the conformity to original documents of all documents submitted to us as copies, certified or otherwise identified to our satisfaction. We have also considered such questions of law as we have deemed relevant and necessary as a basis for the opinion hereinafter expressed.

The opinion expressed herein is limited to matters governed by the laws of the Province of British Columbia and the laws of Canada applicable therein.

Based and relying upon and subject to the foregoing, we are of the opinion that the Shares, when issued and sold by the Company in accordance with the terms of the Plan and the agreements contemplated by the Plan, will be validly issued, fully paid and non-assessable shares in the capital of the Company.

We hereby consent to the filing of this opinion letter as an exhibit to the Registration Statement and further consent to the use of our name wherever appearing in the Registration Statement.

This opinion is effective as at the date hereof and is based upon laws in effect and facts in existence as at the date hereof. We express no opinion as to the effect of future laws or judicial decisions on the subject matter hereof, nor do we undertake any duty to modify this opinion to reflect subsequent facts or developments concerning the Company or developments in the law occurring after the date hereof.

Yours very truly,

McCarthy Tétrault LLP



KPMG LLP
Chartered Professional Accountants
PO Box 10426 777 Dunsmuir Street
Vancouver BC V7Y 1K3
Canada

Telephone	(604) 691-3000
Fax	(604) 691-3031
Internet	www.kpmg.ca

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
Xenon Pharmaceuticals Inc.

We consent to the use of our report dated March 8, 2017, with respect to the consolidated balance sheets of Xenon Pharmaceuticals Inc. as of December 31, 2016 and December 31, 2015, and the related consolidated statements of operations and comprehensive income (loss), shareholders' equity (deficit), and cash flows for each of the years in the three-year period ended December 31, 2016, incorporated herein by reference.

/s/ KPMG LLP
Chartered Professional Accountants

March 8, 2017
Vancouver, Canada

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