

Sandesh Seth

Chairman and CEO

Actinium Pharmaceuticals, Inc.

275 Madison Avenue, 7th Floor

New York, New York 10016

(646) 677-3875

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

Copies of all communications, including communications sent to agent for service, should be sent to:

Thomas Slusarczyk, Esq.

The Matt Law Firm, PLLC

1701 Genesee Street

Utica, NY 13501

Tel. (315) 235-2299

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Approximate date of commencement of proposed sale to the public: From time to time after this Registration Statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

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If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462 I under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement filed pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company” and “emerging growth company” in Rule 12b-2 of the Exchange Act. (Check one):

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 a checkmark if the registrant has elected not to use the extended period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933, AS AMENDED, OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SECURITIES AND EXCHANGE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

EXPLANATORY NOTE

This Amendment No. 1 to the Registration Statement on Form S-3 (Registration No. 333-216748) by Actinium Pharmaceuticals, Inc. on March 16, 2017 (the “Registration Statement”) is being filed solely for the purposes of amending Exhibit 5.1 and filing Exhibit 25.1. The prospectus is unchanged and has been omitted.

Item 16. Exhibits.

Exhibit No. Description

1.1*	Form of Underwriting Agreement
1.2**	<u>At Market Issuance Sales Agreement, dated March 16, 2017, by and between Actinium Pharmaceuticals, Inc. and FBR Capital Markets & Co.</u>
4.1*	Certificate of Designation of Preferred Stock
4.2	<u>Form of Indenture (incorporated by reference to Form S-3/A Exhibit 4.2 filed on April 10, 2014)</u>
4.3	<u>Form of Common Stock Warrant Agreement and Warrant Certificate (incorporated by reference to Form S-3/A Exhibit 4.3 filed on April 10, 2014)</u>
4.4	<u>Form of Preferred Stock Warrant Agreement and Warrant Certificate (incorporated by reference to Form S-3/A Exhibit 4.4 filed on April 10, 2014)</u>
4.5	<u>Form of Debt Securities Warrant Agreement and Warrant Certificate (incorporated by reference to Form S-3/A Exhibit 4.5 filed on April 10, 2014)</u>
4.6*	Form of Subscription Rights Agreement and Certificate
4.7*	Form of Purchase Contract
4.8*	Form of Unit Agreement
5.1***	<u>Opinion of The Matt Law Firm, PLLC</u>
23.1***	<u>Consent of GBH CPAs, PC</u>
23.2***	<u>Consent of The Matt Law Firm, PLLC (included in Exhibit 5.1)</u>
24.1**	<u>Power of Attorney (included in signature page)</u>
25.1****	Form T-1 Statement of Eligibility and Qualification under the Trust Indenture Act of 1939

* To be filed by amendment or as an exhibit to a Current Report of the registrant on Form 8-K or other document to be incorporated herein by reference.

** Previously filed

*** Filed herewith.

**** To be filed separately pursuant to Section 305(b)(2) of the Trust Indenture Act of 1939, if applicable.

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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-3 and has duly caused this amendment to registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New York, State of New York, on October 3, 2017.

ACTINIUM PHARMACEUTICALS, INC.

By: /s/ Sandesh Seth
Name: Sandesh Seth
Title: Chairman and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this amendment to registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Sandesh Seth Sandesh Seth	Chairman and Chief Executive Officer	October 3, 2017
/s/ Steve O'Loughlin Steve O'Loughlin	Principal Financial Officer	October 3, 2017
David Nicholson	* Director	October 3, 2017
/s/ Ajit Shetty Ajit Shetty	Director	October 3, 2017
Richard I. Steinhart	* Director	October 3, 2017

* By: /s/ Sandesh Seth
Attorney-in-Fact

