

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

AMENDMENT NO. 1
to
FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

Actinium Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware

88-0378336

(State or other jurisdiction of
incorporation or organization)

(I.R.S. Employer
Identification Number)

**275 Madison Avenue, 7th Floor
New York, New York 10016
(646) 677-3875**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**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
Fax (315) 624-7359**

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:

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

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**	At Market Issuance Sales Agreement, dated March 16, 2017, by and between Actinium Pharmaceuticals, Inc. and FBR Capital Markets & Co.
4.1*	Certificate of Designation of Preferred Stock
4.2	Form of Indenture (incorporated by reference to Form S-3/A Exhibit 4.2 filed on April 10, 2014)
4.3	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)
4.4	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)
4.5	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)
4.6*	Form of Subscription Rights Agreement and Certificate
4.7*	Form of Purchase Contract
4.8*	Form of Unit Agreement
5.1***	Opinion of The Matt Law Firm, PLLC
23.1***	Consent of GBH CPAs, PC
23.2***	Consent of The Matt Law Firm, PLLC (included in Exhibit 5.1)
24.1**	Power of Attorney (included in signature page)
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.



The Matt Law Firm, PLLC
1701 Genesee Street
Utica, New York 13501

315.624.7360
Fax: 315.624.7359

October 3, 2017

Actinium Pharmaceuticals, Inc.
275 Madison Avenue, 7th Floor
New York, NY 10016

Ladies and Gentlemen:

We have acted as counsel to Actinium Pharmaceuticals, Inc., a Delaware corporation (the "**Company**") with respect to the preparation of the Registration Statement on Form S-3 (the "**Registration Statement**") filed on the date hereof with the Securities and Exchange Commission (the "**Commission**") in connection with the registration by the Company under the Securities Act of 1933, as amended (the "**Securities Act**"), of the offer and sale by the Company from time to time, pursuant to Rule 415 under the Securities Act, of:

- (1) common stock, \$0.001 par value per share, of the Company (the "**Common Stock**");
- (2) preferred stock, \$0.001 par value per share, of the Company (the "**Preferred Stock**");
- (3) debt securities, in one or more series (the "**Debt Securities**"), which may be issued pursuant to an indenture to be dated on or about the date of the first issuance of Debt Securities thereunder, by and between the Company and a trustee to be selected by the Company (the "**Indenture**");
- (4) warrants representing rights to purchase Common Stock, Preferred Stock or Debt Securities (the "**Warrants**");
- (5) rights to purchase shares of Common Stock or Preferred Stock (the "**Rights**");
- (6) purchase contracts relating to the sale or purchase of securities by the Company (the "**Purchase Contracts**"); and
- (7) units comprised of one or more shares of Common Stock, Preferred Stock, Debt Securities or Warrants in any combination (the "**Units**," and together with the Common Stock, the Preferred Stock, the Debt Securities, the Rights, the Purchase Contracts, and the Warrants, the "**Securities**");

with an aggregate offering price not to exceed \$200,000,000. Capitalized terms not defined herein shall have the meanings ascribed to them in the Registration Statement.

We also have acted as counsel to the Company in connection with an offering of up to \$75,000,000 of shares of Common Stock that may be issued and sold (the "**Sales Agreement Shares**") under an At Market Issuance Sales Agreement executed by the Company and FBR Capital Markets & Co. on March 14, 2017 (the "**Sales Agreement**"). The prospectus for the offer and sale of the Sales Agreement Shares is included in the Registration Statement.

The opinions expressed herein are limited exclusively to the General Corporation Law of the State of Delaware (the "**DGCL**"), applicable provisions of the Delaware Constitution and judicial decisions interpreting the DGCL and applicable provisions of the Delaware Constitution, and the federal laws of the United States of America, and we have not considered, and express no opinion on, any other laws or the laws of any other jurisdiction.

In rendering the opinions expressed herein, we have examined and relied upon the originals, or copies certified to our satisfaction, of (i) the Registration Statement; (ii) the Company's Certificate of Incorporation and any amendments to date certified by the Secretary of State of the State of Delaware; (iii) the Company's Bylaws and any amendments to date certified by an officer of the Company; (iv) the minutes and records of the corporate proceedings of the Company with respect to the authorization of the filing of the Registration Statement and the issuance of the Securities and related matters thereto; (v) the form of Sales Agreement; (vi) the form of common stock certificate; and (vii) such other records, documents and instruments as we have deemed necessary for the expression of the opinions stated herein.

In making such examination, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, conformed or photostatic copies and the authenticity of the originals of such latter documents.

In connection with this opinion, we have assumed that: (i) the Registration Statement, and any further amendments thereto (including post-effective amendments) will have become effective and comply with all applicable laws; (ii) a proper prospectus supplement or supplements ("**Prospectus Supplement**") will have been prepared and filed with the Commission describing the Securities offered thereby; (iii) all Securities will be issued and sold in compliance with applicable federal and state securities laws and in the manner stated in the Registration Statement and the appropriate Prospectus Supplement; (iv) a definitive purchase, underwriting or similar agreement, or warrant or unit agreement, with respect to any Securities offered will have been duly authorized and validly executed and delivered by the Company and the other parties thereto; (v) any Securities issuable upon conversion, exchange or exercise of any Security being offered will be duly authorized, created and, if appropriate, reserved for issuance upon such conversion, exchange or exercise; (vi) at the time of the issuance of any Securities, the Company will be a validly existing corporation under the law of its jurisdiction of incorporation; (vii) the number of shares of Common Stock or Preferred Stock issued pursuant to the Registration Statement, together with the number of shares outstanding or reserved at the time of issuance, will not exceed the respective number of shares authorized by the Company's certificate of incorporation in effect at the time of such issuance; (viii) (a) no more than 327,868,852 shares of Common Stock will be sold under the Registration Statement and appropriate Prospectus Supplement assuming a current market price of \$0.61 per share, and (b) no more than 50,000,000 shares of Preferred Stock (the amount currently authorized under the Company's Certificate of Incorporation, as amended) will be sold under the Registration Statement and appropriate Prospectus Supplement, and (ix) all the foregoing actions to be taken by the Company are taken so as not to violate any applicable law and so as to comply with any requirement or restriction imposed by any court or governmental or regulatory body having jurisdiction over the Company or any of its property.

Based on the foregoing, subject to the assumptions and limitations stated herein, and having due regard for the legal considerations we deem relevant, we are of the opinion that:

1. When (i) the issuance and sale of any shares of Common Stock have been duly authorized by all necessary corporate action of the Company and (ii) such shares have been issued and delivered against payment of the purchase price therefor (in an amount in excess of the par value thereof) in accordance with the applicable purchase, underwriting or other agreement, and as contemplated by the Registration Statement, such shares of Common Stock will be validly issued, fully paid and nonassessable. The Common Stock covered in the opinion in this paragraph includes any shares of Common Stock that may be issued upon exercise, conversion or exchange pursuant to the terms of any other Securities but does not include the Sales Agreement Shares.

2. When (i) the terms of any Preferred Stock of a particular series and their issuance and sale have been duly authorized by all necessary corporate action of the Company, (ii) a certificate of designations with respect to such series of Preferred Stock has been duly adopted by the Company and filed with the Secretary of State of the State of Delaware, and (iii) such shares of Preferred Stock have been issued and delivered against payment of the purchase price therefor (in an amount in excess of the par value thereof) in accordance with the applicable purchase, underwriting or other agreement, and as contemplated by the Registration Statement, such shares of Preferred Stock will be validly issued, fully paid, and nonassessable. The Preferred Stock covered in the opinion in this paragraph includes any shares of Preferred Stock that may be issued upon exercise, conversion or exchange pursuant to the terms of any other Securities.

3. When (i) the terms of any Debt Securities of a particular series and their issuance and sale have been duly authorized by all necessary corporate action of the Company, (ii) such Debt Securities have been duly executed and authenticated in accordance with the applicable Indenture and issued and sold as contemplated in the Registration Statement, and (iii) the Company has received the consideration provided for in the authorizing resolutions, such Debt Securities will constitute valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms.

4. When (i) the terms of any Warrants and their issuance and sale have been duly authorized by all necessary corporate action of the Company and (ii) such Warrants have been duly executed, countersigned and delivered in accordance with the applicable warrant agreement and against payment of the purchase price therefor in accordance with the applicable purchase, underwriting or other agreement, and as contemplated by the Registration Statement, such Warrants will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms.

5. When (i) the terms of any Rights and their issuance and sale have been duly authorized by all necessary corporate action of the Company and (ii) such Rights have been duly executed, countersigned and delivered in accordance with the applicable rights agreement and against payment of the purchase price therefor in accordance with the applicable purchase, underwriting or other agreement, and as contemplated by the Registration Statement, such Rights will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms.

6. When (i) the terms of any Purchase Contracts and their issuance and sale have been duly authorized by all necessary corporate action of the Company and (ii) such Purchase Contracts have been duly executed, countersigned and delivered in accordance with the applicable purchase contract agreement and against payment of the purchase price therefor in accordance with the applicable purchase, underwriting or other agreement, and as contemplated by the Registration Statement, such Purchase Contracts will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms; however, we express no opinion regarding any securities subject to the Purchase Contracts which are not securities issued by the Company.

7. When (i) the terms of any Units and their issuance and sale have been duly authorized by all necessary corporate action of the Company and (ii) such Units have been duly executed, countersigned and delivered in accordance with the applicable unit agreement and against payment of the purchase price therefor in accordance with the applicable purchase, underwriting or other agreement, and as contemplated by the Registration Statement, such Units will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms; however, we express no opinion regarding any securities comprising the Units which are not securities issued by the Company.

8. The Sales Agreement Shares are duly authorized and, when such shares have been issued and delivered against payment of the purchase price therefor (in an amount in excess of the par value thereof) in accordance with the Sales Agreement, and as contemplated by the Registration Statement, the Sales Agreement Shares will be validly issued, fully paid and nonassessable.

Our opinion that any document is legal, valid and binding is qualified as to: (i) limitations imposed by bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium or other laws relating to or affecting the rights of creditors generally; (ii) rights to indemnification and contribution, which may be limited by applicable law or equitable principles; and (iii) general principles of equity, including without limitation concepts of materiality, reasonableness, good faith and fair dealing, and the possible unavailability of specific performance or injunctive relief and limitation of rights of acceleration, regardless of whether such enforceability is considered in a proceeding in equity or at law.

October 3, 2017
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We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to all references to us in the Registration Statement. In giving this consent, we do not thereby admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ The Matt Law Firm, PLLC

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement of Actinium Pharmaceuticals, Inc. on Form S-3/A of our report dated March 16, 2017 relating to the consolidated financial statements of Actinium Pharmaceuticals, Inc. as of December 31, 2016 and 2015 and for the years then ended. We also consent to the reference to our firm under the headings "Experts" appearing therein.

/s/ GBH CPAs, PC

GBH CPAs, PC
www.gbcpas.com
Houston, Texas

October 3, 2017