

Actinium Pharmaceuticals, Inc.

Form 424B5

February 26, 2018

Amendment No. 1 Dated February 26, 2017 to
Prospectus Supplement Dated February 15, 2017
(To Prospectus Dated October 24, 2017)

Filed Pursuant to Rule 424(b)(5)
Registration No. 333-216748

Subscription Rights to Purchase Up to 50,000,000 Units

This amendment amends and supplements the prospectus supplement dated February 15, 2018, which we refer to as the prospectus supplement, and which forms a part of our Registration Statement on Form S-3 (Registration No. 333-216748). This amendment is being filed to amend and supplement certain information included in the prospectus supplement with the information contained in this amendment. This amendment should be read in conjunction with the prospectus supplement and the prospectus dated October 24, 2017. This amendment amends only those sections of the prospectus supplement listed in this amendment; all other sections of the prospectus supplement remain as is.

The prospectus supplement and this amendment relate to our distribution to holders of our common stock and to holders of certain of our outstanding warrants who are entitled to participate in this offering, at no charge, non-transferable subscription rights to purchase up to an aggregate of \$25.0 million of units, subject to increase as described in the prospectus supplement. Each unit, which we refer to as a Unit, consists of one share of common stock, 0.25 series A warrants and 0.75 series B warrants, which we refer to as the Common Stock, Series A Warrants, and Series B Warrants, respectively. We refer to the Series A Warrants and the Series B Warrants collectively as the Warrants. Each whole Series A Warrant and whole Series B Warrant will be exercisable for one share of our common stock. We refer to the offering that is the subject of the prospectus supplement, as amended by this amendment, as the Rights Offering. In the Rights Offering, you have received one subscription right for every share of common stock owned at 5:00 p.m., Eastern Time, on February 14, 2018, the record date of the Rights Offering, or the Record Date. The Common Stock, Series A Warrants and Series B Warrants comprising the Units will separate upon the closing of the Rights Offering and will be issued separately but may only be purchased as a Unit, and the Units will not trade as a separate security. The subscription rights will not be tradable.

On February 23, 2018, our board of directors determined that the subscription price per Unit should be reduced to \$0.50 per Unit, that the Series A Warrant exercise price should be reduced to \$0.60 per share, and that the Series B Warrant exercise price should be reduced to \$0.70 per share. Our board of directors also determined that the redemption price threshold of \$1.80 per share of common stock, for the Series A Warrants, should be reduced to \$1.20 per share, and that the redemption price threshold of \$3.30 per share of common stock, for the Series B Warrants, should be reduced to \$2.10 per share.

Accordingly, after giving effect to the foregoing revisions to the pricing terms, each subscription right will entitle you to purchase one Unit, which we refer to as the Basic Subscription Right, at a subscription price per Unit of \$0.50, which we refer to as the Subscription Price. Each whole Series A Warrant entitles the holder to purchase one share of common stock at an exercise price of \$0.60 per share from the date of issuance through its expiration 12 months from the date of issuance, and each whole Series B Warrant entitles the holder to purchase one share of common stock at an exercise price of \$0.70 per share from the date of issuance through its expiration 30 months from the date of issuance. Any rights certificates previously distributed to holders of our common stock or participating warrants are hereby deemed to be amended to reflect the foregoing revisions to the pricing terms.

The over-subscription privilege and allocation mechanics in the Rights Offering remain unchanged from before. Accordingly, if you exercise your Basic Subscription Rights in full, and any portion of the Units remain available under the Rights Offering, you will be entitled to an over-subscription privilege to purchase a portion of the unsubscribed Units at the Subscription Price, subject to proration and ownership limitations, which we refer to as the Over-Subscription Privilege. Each subscription right consists of a Basic Subscription Right and an Over-Subscription Privilege, which we refer to as the Subscription Right.

The Subscription Rights will expire if they are not exercised by 5:00 p.m., Eastern Time, on March 2, 2018, unless the Rights Offering is extended or earlier terminated by us. If we elect to extend the Rights Offering, we will issue a press release announcing the extension no later than 9:00 a.m., Eastern Time, on the next business day after the most recently announced expiration date of the Rights Offering. We may extend the Rights Offering for additional periods in our sole discretion. Once made, all exercises of Subscription Rights are irrevocable.

As a result of the foregoing revisions to the pricing terms of the Rights Offering, any holders of subscription rights who have already exercised their subscription rights at the original subscription price of \$0.70 per Unit, or who submit election forms referencing the original subscription price of \$0.70 per Unit, will be considered to have exercised their subscription rights at the revised Subscription Price of \$0.50 per Unit and will receive the appropriate number of shares of Common Stock, Series A Warrants and Series B Warrants as if such holder had subscribed at the revised Subscription Price of \$0.50 per Unit.

We have not entered into any standby purchase agreement or other similar arrangement in connection with the Rights Offering. The Rights Offering is being conducted on a best-efforts basis and there is no minimum amount of proceeds necessary to be received in order for us to close the Rights Offering.

We have engaged Maxim Group LLC to act as dealer-manager in the Rights Offering.

Investing in our securities involves a high degree of risk. See the section entitled “Risk Factors” beginning on page S-21 of the prospectus supplement. You should carefully consider these risk factors, as well as the information contained in the prospectus supplement, as amended by this amendment, and the prospectus, before you invest.

Broadridge Corporate Issuer Solutions, Inc. will serve as the Subscription Agent and Information Agent for the Rights Offering. The Subscription Agent will hold the funds we receive from subscribers until we complete, abandon or terminate the Rights Offering. If you want to participate in this Rights Offering and you are the record holder of your shares or participating warrants, we recommend that you submit your subscription documents to the Subscription Agent well before the deadline. If you want to participate in this Rights Offering and you hold shares through your broker, dealer, bank or other nominee, you should promptly contact your broker, dealer, bank or other nominee and submit your subscription documents in accordance with the instructions and within the time period provided by your broker, dealer, bank or other nominee. For a detailed discussion, see “The Rights Offering — The Subscription Rights” In the prospectus supplement, as amended by this amendment.

Our board of directors reserves the right to terminate the Rights Offering for any reason any time before the closing of the Rights Offering. If we terminate the Rights Offering, all subscription payments received will be returned within 10 business days, without interest or deduction. We expect the Rights Offering to expire on or about March 2, 2018, subject to our right to extend the Rights Offering as described above, and that we would close on subscriptions within five business days of such date.

Our common stock is listed on NYSE American under the symbol “ATNM.” On February 23, 2018, the last reported sale price of our common stock was \$0.54 per share. There is no established public trading market for the Series A Warrants or the Series B Warrants. We do not intend to apply for listing of the Series A Warrants and Series B Warrants on any securities exchange or recognized trading system. The Subscription Rights are non-transferrable and

will not be listed for trading on NYSE American or any other securities exchange or market. You are urged to obtain a current price quote for our common stock before exercising your Subscription Rights.

	Per Unit	Total(2)
Subscription price	\$ 0.500	\$ 25,000,000
Dealer-Manager fees and expenses ⁽¹⁾	\$ 0.037	\$ 1,835,000
Proceeds to us, before expenses	\$ 0.463	\$ 23,165,000

(1) In connection with this Rights Offering, we have agreed to pay to Maxim Group LLC as the dealer-manager a cash fee equal to 7% of the gross proceeds received by us directly from exercises of the Subscription Rights. We have also agreed to reimburse the dealer-manager for its expenses up to \$85,000. See “Plan of Distribution” in the prospectus supplement.

(2) Assumes the Rights Offering is fully subscribed, but excludes proceeds from the exercise of Warrants included within the Units.

Our board of directors is making no recommendation regarding your exercise of the Subscription Rights. You should carefully consider whether to exercise your Subscription Rights before the expiration date. You may not revoke or revise any exercises of Subscription Rights once made.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of the prospectus supplement, as amended by this amendment, or the prospectus. Any representation to the contrary is a criminal offense.

Dealer-Manager

Maxim Group LLC

The date of this prospectus supplement is February 26, 2018

This amendment amends and supplements the prospectus supplement to reflect the reduction of the Subscription Price per Unit to \$0.50, the reduction of the Series A Warrant exercise price to \$0.60 per share, the reduction of the Series B Warrant exercise price to \$0.70 per share, the reduction of the Series A Warrant redemption price threshold to \$1.20 per share, the reduction of the Series B Warrant redemption price threshold to \$2.10 per share and to make related changes. All references in the prospectus supplement to the Unit Subscription Price of \$0.70 per share are hereby amended to \$0.50 per Unit. All references to the Series A Warrants exercise price of \$0.90 per share are hereby amended to reflect an exercise price of \$0.60 per share. All references to the Series B Warrant exercise price of \$1.05 per share are hereby amended to reflect an exercise price of \$0.70 per share. All references to the redemption price threshold of \$1.80 per share, for the Series A Warrants, are hereby amended to \$1.20 per share. All references to the redemption price threshold of \$3.30 per share, for the Series B Warrants, are hereby amended to \$2.10 per share. All references to the prospectus supplement are hereby amended to refer to the prospectus supplement, as amended by this amendment.

The sections of the prospectus supplement entitled “Summary of the Rights Offering” and “Dilution” are hereby replaced by the following new Summary of the Rights Offering and Dilution sections (which reflect the changes to the Subscription Price of the Units, the exercise prices of the Warrants, and the redemption price thresholds of the Warrants).

This amendment should be read in conjunction with and is qualified by reference to the prospectus supplement, except to the extent that the information provided by this amendment supersedes the information contained in the prospectus supplement.

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Summary of the Rights Offering

Securities to be Offered	We are distributing to you, at no charge, 50,000,000 non-transferable Subscription Rights to purchase one Unit for every share of our common stock or participating warrant that you owned on the Record Date. Each Unit consists of one share of Common Stock, 0.25 Series A Warrants and 0.75 Series B Warrants.
Subscription Price	\$0.50 per Unit.
Warrants	Each whole Series A Warrant entitles the holder to purchase one share of common stock at an exercise price of \$0.60 per share from the closing date through its expiration 12 months from the date of issuance. Each whole Series B Warrant entitles the holder to purchase one share of common stock at an exercise price of \$0.70 per share from the closing date through its expiration 30 months from the date of issuance. The Warrants will be exercisable for cash, or, solely during any period when a registration statement for the exercise of the Warrants is not in effect, on a cashless basis. We may redeem the Series A Warrants for \$0.001 per warrant if our common stock closes above \$1.20 per share for ten consecutive trading days. We may redeem the Series B Warrants for \$0.001 per warrant if our common stock closes above \$2.10 per share for ten consecutive trading days.
Record Date	5:00 p.m., Eastern Time, February 14, 2018.
Basic Subscription Rights	Your Basic Subscription Right will entitle you to purchase one Unit at the Subscription Price.
Over-Subscription Privilege	If you exercise your Basic Subscription Rights in full, you may also choose to purchase a portion of any Units that are not purchased by our other stockholders or participating warrant holders through the exercise of their Basic Subscription Rights, subject to proration and stock ownership limitations described elsewhere in this prospectus supplement.
Expiration date	The Subscription Rights will expire at 5:00 p.m., Eastern Time, on March 2, 2018.
Procedure for Exercising Subscription Rights	To exercise your Subscription Rights, you must take the following steps: If you are a record holder of our common stock or participating warrant holder, you must deliver payment and a properly completed Rights Certificate to the Subscription Agent to be received before 5:00 p.m., Eastern Time, on March 2, 2018. You may deliver the documents and payments by first class mail or courier service. If you use first class mail for this purpose, we recommend using registered mail, properly insured, with return receipt requested. If you are a beneficial owner of shares or participating warrants that are registered in the name of a broker, dealer, bank or other nominee, you should instruct your broker, dealer, bank or other nominee to exercise your Subscription Rights on your behalf. Please follow the instructions of your nominee, who may require that you

meet a deadline earlier than 5:00 p.m., Eastern Time, on March 2, 2018.

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As a result of the revisions to the pricing terms of the Rights Offering described in the amendment, dated February 26, 2018, to this prospectus supplement, any holders of subscription rights who previously exercised their subscription rights at the original subscription price of \$0.70 per Unit, or who submit election forms referencing the original subscription price of \$0.70 per Unit, will be considered to have exercised their subscription rights at the revised Subscription Price of \$0.50 per Unit and will receive the appropriate number of shares of Common Stock, Series A Warrants and Series B Warrants as if such holder had subscribed at the revised Subscription Price of \$0.50 per Unit.

Delivery of Shares and Warrants

As soon as practicable after the expiration of the Rights Offering, and within five business days thereof, we expect to close on subscriptions and for the Subscription Agent to arrange for the issuance of the shares of Common Stock, Series A Warrants and Series B Warrants purchased pursuant to the Rights Offering. All shares and Warrants that are purchased in the Rights Offering will be issued in book-entry, or uncertificated form, meaning that you will receive a direct registration, or DRS, account statement from our transfer agent reflecting ownership of these securities if you are a holder of record of shares or warrants. If you hold your shares in the name of a bank, broker, dealer, or other nominee, DTC will credit your account with your nominee with the securities you purchased in the Rights Offering.

Non-transferability of Subscription Rights

The Subscription Rights may not be sold, transferred, assigned or given away to anyone. The Subscription Rights will not be listed for trading on any stock exchange or market.

Transferability of Warrants

The Series A Warrants and Series B Warrants will be separately transferable following their issuance and through their expiration 12 months and 30 months, respectively, from the date of issuance.

No board recommendation

Our board of directors is not making a recommendation regarding your exercise of the Subscription Rights. You are urged to make your decision to invest based on your own assessment of our business and financial condition, our prospects for the future, the terms of the Rights Offering, the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus and other information relevant to your circumstances. Please see "Risk Factors" in the prospectus supplement for a discussion of some of the risks involved in investing in our securities.

No Revocation	All exercises of Subscription Rights are irrevocable, even if you later learn of information that you consider to be unfavorable to the exercise of your Subscription Rights.
Use of Proceeds	Assuming that the Rights Offering is fully subscribed, after deducting fees and expenses and excluding any proceeds received upon exercise of any Series A Warrants and Series B Warrants, we estimate the net proceeds of the Rights Offering will be approximately \$23 million. We currently intend to use the net proceeds from the sale of securities offered by this prospectus supplement to complete our ongoing pivotal, Phase 3 SIERRA trial for our lead product candidate Iomab-B, generate topline results and support the filing of a BLA application with the U.S. Food and Drug Administration (FDA), all of which are anticipated to cost an aggregate of approximately \$12 to \$15 million. We may elect to use any additional proceeds above \$15 million to fund proof-of-concept of our planned Phase 2 Actimab-MDS trial from the CD33 Program, if appropriate, as we believe this can further support its partnering strategy for the CD33 program. We will also use the proceeds to support our AWE Technology Platform, research and development and general working capital needs. See “Use of Proceeds” in the prospectus supplement.
Maximum Exercise of Subscription Rights	Unless we otherwise agree in writing, a person or entity, together with related persons or entities, may not exercise Subscription Rights (including Over-Subscription Privileges) to purchase Units that, when aggregated with their existing ownership, would result in such person or entity, together with any related persons or entities, owning in excess of 19.9% of our issued and outstanding shares of common stock following the closing of the transactions contemplated by this Rights Offering. In addition, to the extent that any participating warrant holder’s right to participate in this Rights Offering would result in the holder exceeding the beneficial ownership limitation set forth in the participating warrants, then the holder will not be entitled to participate in this Rights Offering. See “The Rights Offering — Limitation on the Purchase of Units” in the prospectus supplement.
Material U.S. Federal Income Tax Consequences	For U.S. federal income tax purposes, we do not believe you should recognize income or loss upon receipt or exercise of a Subscription Right. You should consult your own tax advisor as to the tax consequences of the Rights Offering in light of your particular circumstances. See “Material U.S. Federal Income Tax Consequences” in the prospectus supplement.
Extension and Termination	Although we do not presently intend to do so, we may extend the Rights Offering for additional time in our sole discretion. Our board of directors may for any reason terminate the Rights Offering at any time before the completion of the Rights Offering.
Subscription Agent	Broadridge Corporate Issuer Solutions, Inc.
Questions	

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If you have any questions about the Rights Offering, please contact the Subscription and Information Agent, Broadridge Corporate Issuer Solutions, Inc., at (855) 793-5068 (toll free).

Market for common stock

Our common stock is listed on NYSE American under the symbol "ATNM."

Dealer-Manager

Maxim Group LLC.

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Dilution

Purchasers of Units in the Rights Offering will experience an immediate dilution of the net tangible book value per share of our common stock. Our net tangible book value as of September 30, 2017 was approximately \$18.2 million, or \$0.23 per share of our common stock based upon 80,025,639 shares of our common stock outstanding. Net tangible book value per share is equal to our total tangible assets less our total liabilities, divided by the number of shares of our outstanding common stock.

Dilution per share of common stock equals the difference between the amount per share of common stock paid by purchasers of Units in the Rights Offering (ascribing no value to the Warrants contained in the Units) and the net tangible book value per share of our common stock immediately after the Rights Offering.

Based on the sale by us in this Rights Offering of a maximum of 50,000,000 Units at the Subscription Price of \$0.50 per Unit (assuming no exercise of the Warrants), and after deducting estimated offering expenses and dealer-manager fees and expenses payable by us, our pro forma net tangible book value as of September 30, 2017 would have been approximately \$41.4 million, or \$0.32 per share. This represents an immediate increase in pro forma net tangible book value to existing stockholders of \$0.09 per share and an immediate dilution to purchasers in the Rights Offering of \$(0.18) per share. The following table illustrates this per-share dilution:

Subscription Price		\$ 0.50
Offering price per share and related warrants contained in a Unit		\$ 0.50
Net tangible book value per share as of September 30, 2017	\$ 0.23	
Increase in net tangible book value per share attributable to Rights Offering	\$ 0.09	
Pro forma net tangible book value per share as of September 30, 2017, after giving effect to Rights Offering		\$ 0.32
Dilution in net tangible book value per share to purchasers in the Rights Offering		\$ (0.18)

The number of shares of our common stock that will be outstanding immediately after the offering is based on 80,025,639 shares outstanding as of September 30, 2017, and excludes:

- 6,156,361 shares of common stock issuable upon the exercise of stock options outstanding as of September 30, 2017 under our equity incentive plans, with a weighted average exercise price of \$2.62 per share;
- 6,991,975 shares of common stock available for future grants under our equity incentive plans as of September 30, 2017;
- 222,908 shares of restricted stock reserved for issuance as of September 30, 2017; and
- 27,220,388 shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2017, with a weighted average exercise price of \$1.92 per share.

**Amendment No. 1 to
Prospectus Supplement**

Dealer-Manager

Maxim Group LLC

February 26, 2018